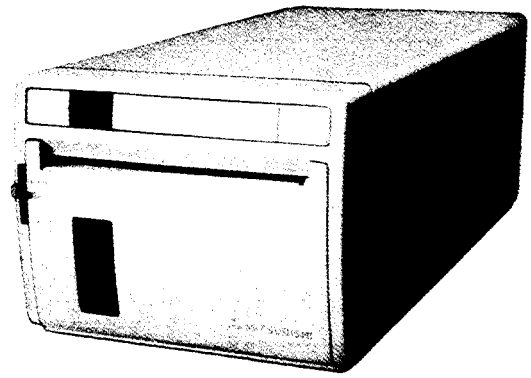
JAN. 1991

MITSUBISHI Service Manual

VIDEO COPY PROCESSOR



MODELS
P66B
P66E

※The HEAD LEVER on the FRONT PANEL should be located at "UP" position after servicing.
※ Use a white CLEANING PAPER (Parts No.; 857P002010) or a HEAD CLEANING PEN (Parts. No.; 859C425050) for cleaning of the THERMAL HEAD.
Do not use a russet CLEANING PAPER (Parts No.; 857P001030).
Because it may damage the THERMAL HEAD.

Before servicing this chassis, it is important that the serviceman reads the " SAFETY PRECAUTIONS" and " PRODUCT SAFETY NOTICE" in this service manual.

Specifications

●Power supply	220~240V AC 50Hz
●Power consumption	110W
●Input terminal	BNC contact plug video signal 1 Vp-p (75Ω)
●Output terminal	BNC contact plug video signal 1 Vp-p (75Ω)
●Resolution	(Standard) (H) 640dots x (V) 600lines Side feed (H) 800dots x (V) 600lines
●Gradations	256 gradations
●Printing time	Approx. 5.8sec. (standard) PAL
●Operating conditions	Temperature 5℃-40℃ (41°F – 104°F) Humidity 20 – 80% RH (No dewing)
●Print size	100x75mm (Standard)
●External Dimensions	154 (W) x 125 (H) x 314 (D) mm 6″ 4-15/16″ 12-3/8″
●Weight	3.9kg (8.6lbs)

Features

●High speed printing
●Error display function
●Compact and light weight
●Wired remote control

Standard accessories

BNC/BNC connection cable(78-23/32″)	1 piece
Wired remote controller	1 set
AC power cord	1 piece
Thermal paper K65HM	1 roll
Cleaning paper	1 sheet
Easy operation label	1 sheet

Optional accessory
Thermal paper K65HM

MITSUBISHI ELECTRIC CORPORATION

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SAFETY PRECAUTIONS

NOTICE. Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

LEAKAGE CURRENT CHECK

Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the AC plug removed from the 220V/240V AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an ohm-meter, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (metal cabinet, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 megohm. Any resistance below this value indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

2. Hot Check

The test sequence, with reference to the measuring circuit in Fig. A, is as follows:

(1) With switch S1 open, the receiver is to be connected to the measuring circuit. Immediately after connection, the leakage current is measured using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions.

(2) Switch S1 is then to be closed, energizing the receiver, and immediately after closing the switch, the leakage current is to be measured using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions.
Current measurements of items (1) and (2) are to be repeated after the receiver has reached thermal stabilization.
The leakage current shall not be more than 0.5 milliampere.

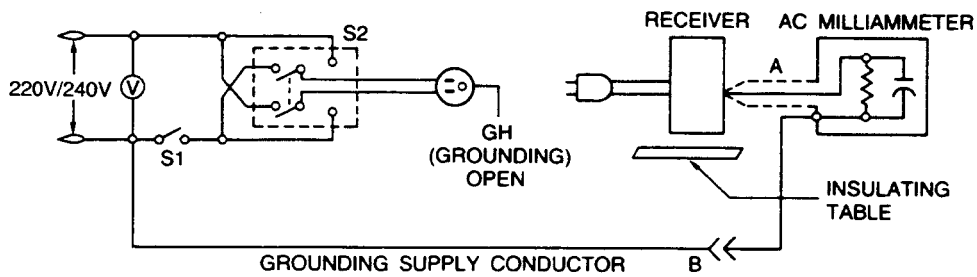


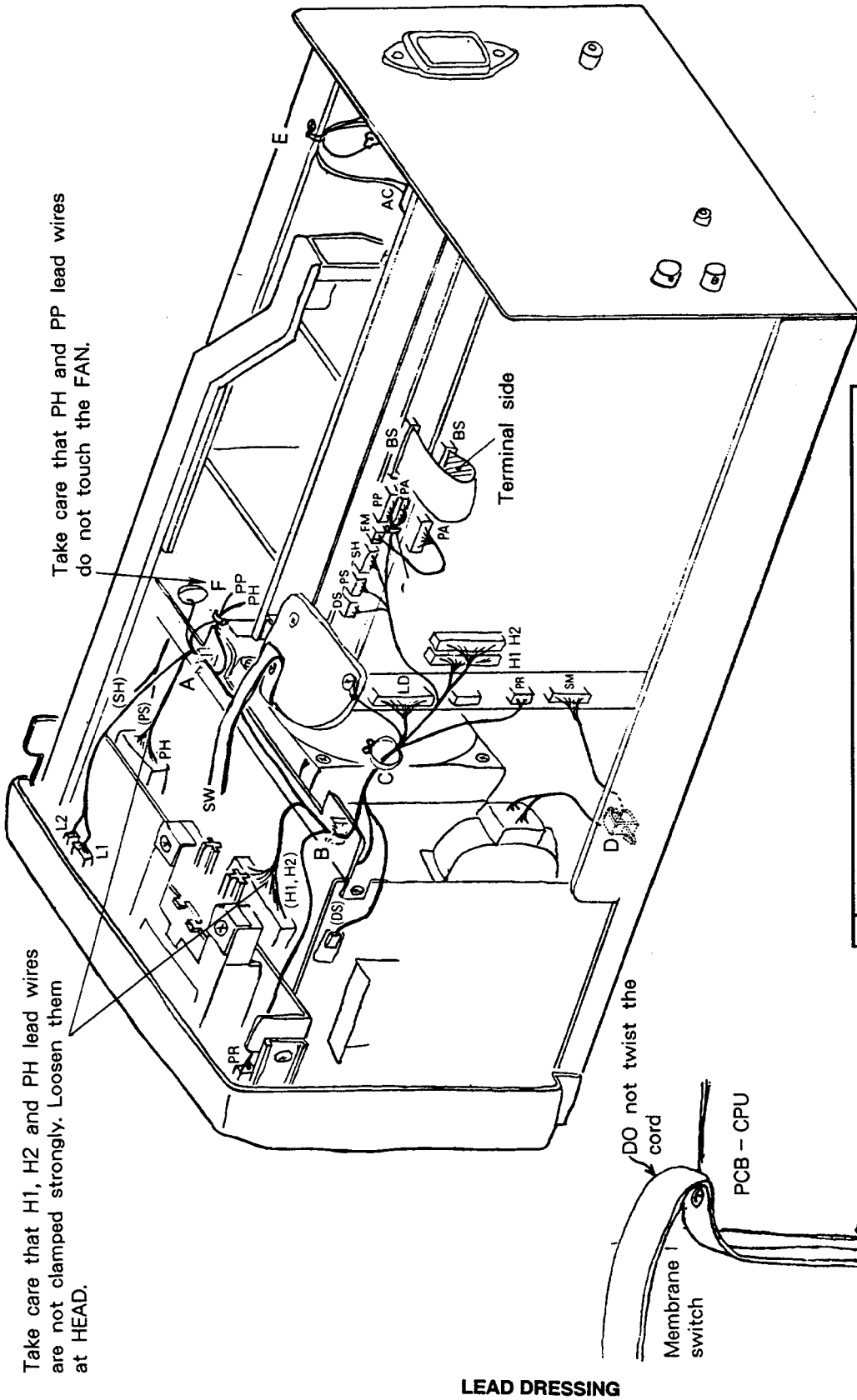
Fig. A

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the video copy processor have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this service manual. Electrical components having such features are identified by shading on the schematic diagram and the parts list of this service manual and by marking on the supplementary sheet for this chassis to be issued subsequently.
Therefore replacements for any safety parts should be identical in value and characteristics.

The lead wires to be clamped are listed in the table below.

Note : The inner wires are routed or clamped so that they do not come close to the heat generating or high-tension parts. After servicing route all wires in their oirginal position.

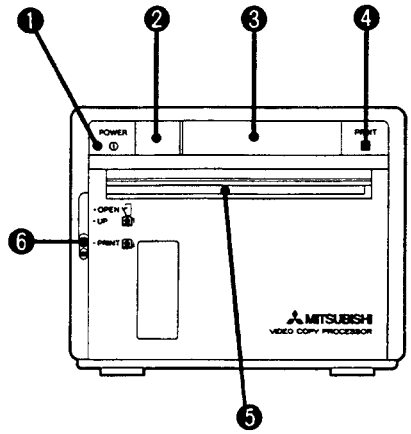

Take care that PH and PP lead wires do not touch the FAN.
Terminal side
Take care that H1, H2 and PH lead wires are not clamped strongly. Loosen them at HEAD.
DO not twist the cord
PCB - CPU
Membrane switch
The black wire (connector side) should be as shown.

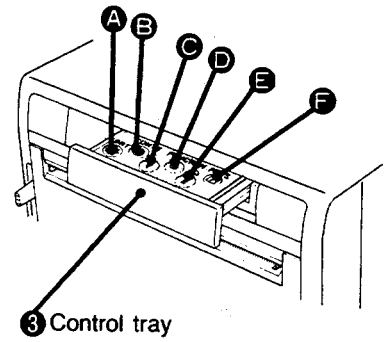
	LEAD TO BE CLAMPED
A	LD (L1, L2), PP, PH
B	LD (L1, L2), PP, H1, H2, PR, GND lead
C	LD (L1, L2), PP, H1, H2, DS, PS, SH, FM, PR, GND lead
D	SM
E	AC, Terminal lead
F	PP, PH
G	PA,PP

LEAD DRESSING

FEATURES AND FUNCTIONS

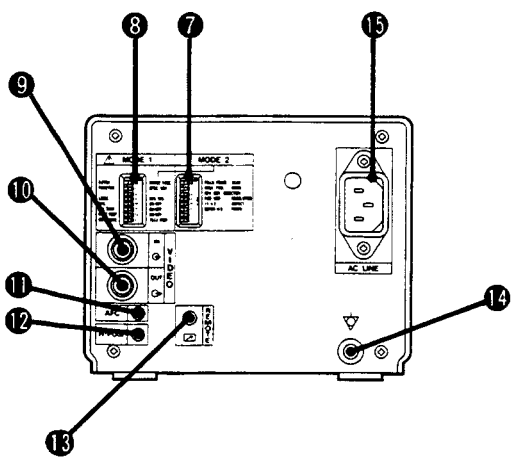
Front Panel





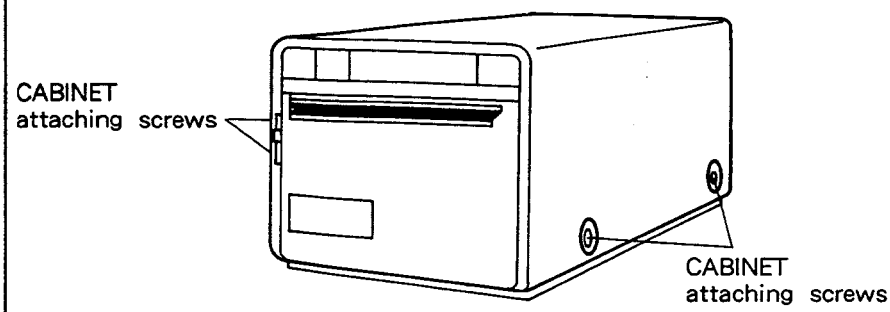
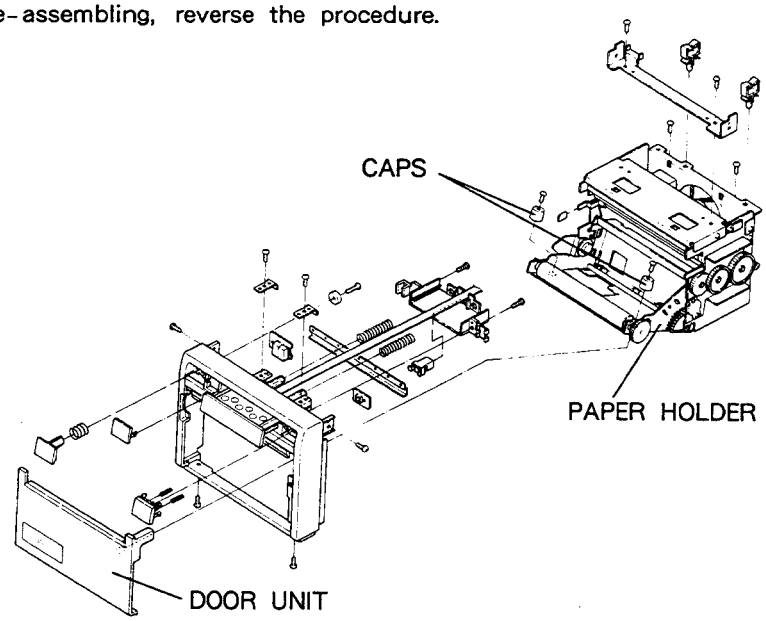
	Name	Function
❶	POWER switch	Turns on or off the power.
❷	Indicator	Displays standby, functions and error messages.
❸	Control tray	
	Ⓐ Brightness button	Adjusts brightness.
	Ⓑ Contrast button	Adjusts contrast.
	Ⓒ Function value change button	Changes each function value.
	Ⓓ Function button	Selects functions.
	Ⓔ Function value change/ Copy button	Changes each function value. / Press this button in standby state for additional copies of the previous print-out.
	Ⓕ Print-Sub button	Press this button to memorize and print.
❹	Print button	Press this button to memorize and print the picture displayed at that instant.
❺	Print exit/Cutter	Printed paper will come out through this slot.
❻	Lever	Front panel open-close/Thermal head up-down.

Rear Panel



	Name	Function
❼	MODE 2 switch	Selects a special function.
❽	MODE 1 switch	
❾	VIDEO IN connector (BNC type)	Video signal input
❿	VIDEO OUT connector (BNC type)	Video signal output (Monitor output)
⓫	AFC control	Adjust AFC
⓬	Horizontal position control	Adjust the horizontal position of a picture.
⓭	Remote control terminal	Terminal to connect the remote controller
⓮	Potential equalization terminal	Makes the connected equipment potential equal.
⓯	Power terminal	Connect the power cord to this terminal.

DISASSEMBLY

Removal of CABINET	1. Remove four screws securing the CABINET. (Fig.1) 2. Slide the cabinet slightly backward and remove it.  **Fig. 1**
Removal of DOOR UNIT	1. Set the knob to "OPEN" and open the DOOR. 2. Remove the CAPS. 3. Hold up the PAPER HOLDER slightly and remove the DOOR UNIT. 4. For re-assembling, reverse the procedure.  **Fig. 2**
Removal of the FRONT assembly	1. Remove the CABINET. (Fig. 1) 2. Remove the DOOR UNIT. 3. Disconnect the CONNECTORS [LD], [PR], [SW] connected to CPU PCB. 4. Remove the MEMBRANE SWITCH attaching screw connected to the PCB HOLDER. (Fig. 3) 5. Remove the earth wire connected to the PCB HOLDER. (Fig. 3) 6. Remove 4 screws securing the FRONT assembly.(Fig. 4) 7. Remove the KNOB. (Fig. 4) 8. Remove the FRONT Assembly to your side. (Note) Remove from the left side so that the right end of the PAPER SHAFT is not hit. (Fig. 2)

Removal of the FRONT assembly

9. For re-assembling, reverse the procedure.

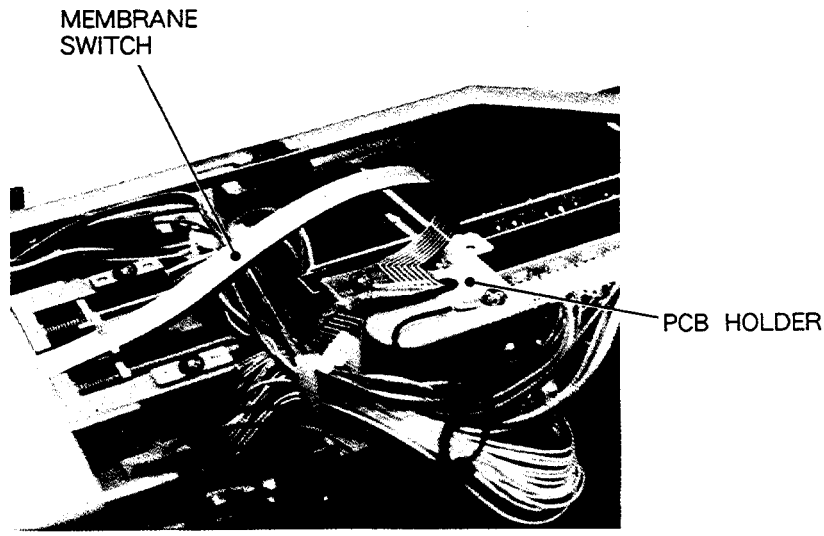


Fig. 3

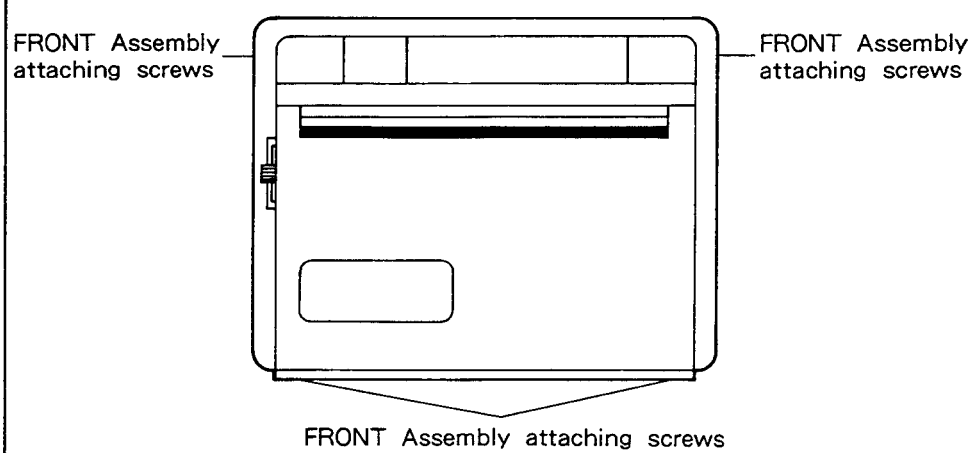


Fig. 4 FRONT assembly

Removal of VIDEO PCB

1. Remove the CABINET. (Fig. 1)
2. Remove the PCB HOLDER. (Fig. 3)
3. Remove the REAR PANEL. (Fig. 5)
4. Remove the screw securing the PCB R BRACKET. (Fig. 5)
5. Disconnect all the connectors connected to VIDEO PCB.
6. Hold up the right side (rear panel side) of VIDEO PCB slightly, slide it to the front and remove it.
7. Remove the screws securing VIDEO PCB.
8. When re-assembling, reverse the procedure.

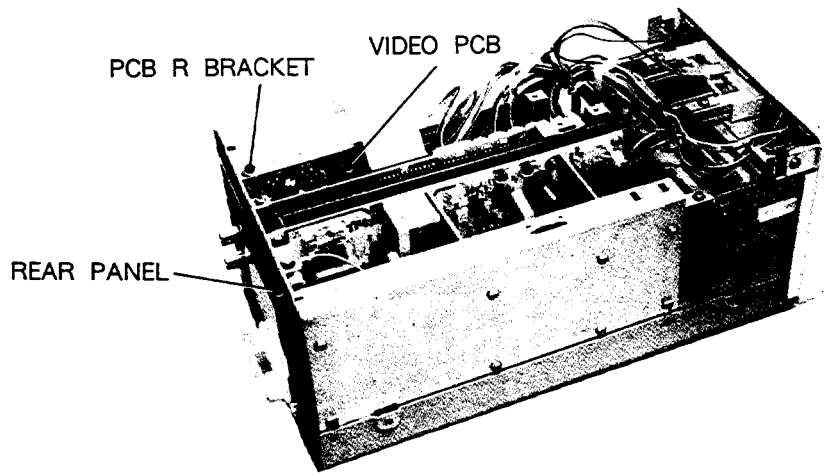


Fig. 5

Removal of CPU PCB

1. Remove the CABINET. (Fig. 1)
2. Remove the PCB HOLDER. (Fig. 3)
3. Remove the REAR PANEL. (Fig. 6)
4. Remove screws securing PCB R BRACKET. (Fig. 6)
5. Disconnect all the connectors connected to CPU PCB.
6. Hold up the right side (rear panel side) of CPU PCB slightly, slide it to the front and remove it.
7. Remove screws securing CPU PCB.
8. When re-assembling, reverse the procedure.

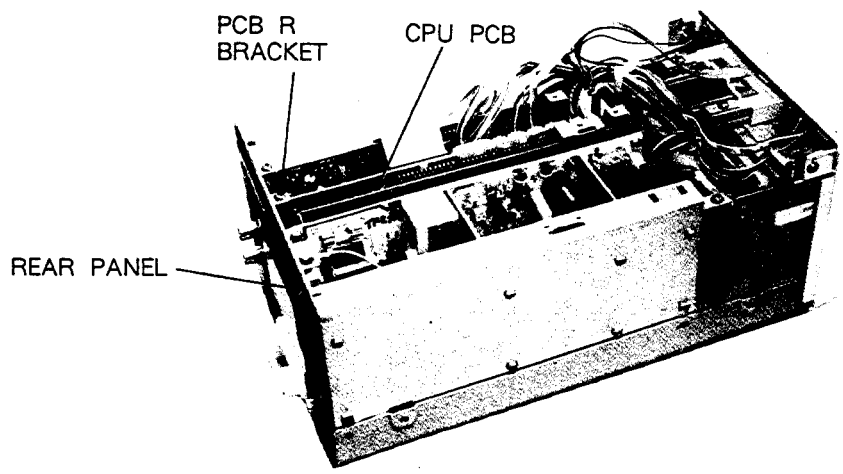


Fig. 6

Removal of POWER PCB assembly

1. Remove the CABINET. (Fig. 1)
2. Remove the PCB HOLDER. (Fig. 3)
3. Remove the screws securing the POWER SWITCH BRACKET. (Fig. 7)
4. Remove B-P SWITCH HOLDER and remove the POWER SWITCH BRACKET. (Fig. 7)
5. Remove screws securing POWER PCB assembly. (Fig. 7)
6. Remove one (top right) of the four screws securing the REAR PANEL. (Fig. 7)
7. Slide the POWER PCB assembly to the front, remove it from the set and disconnect all the connectors.
8. When re-assembling, reverse the procedure.

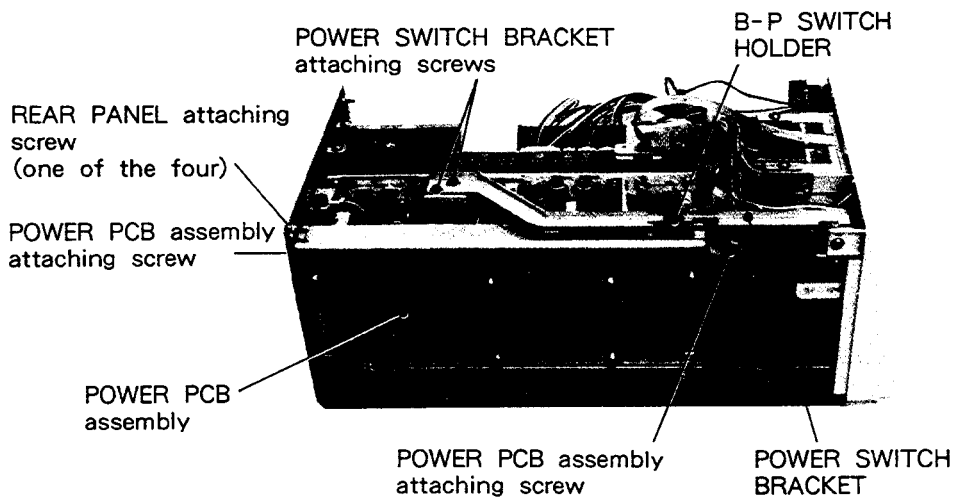

POWER SWITCH BRACKET attaching screws
B-P SWITCH HOLDER
REAR PANEL attaching screw (one of the four)
POWER PCB assembly attaching screw
POWER PCB assembly
POWER PCB assembly attaching screw
POWER SWITCH BRACKET

Fig. 7

Removal of PRINTER assembly

1. Remove the CABINET. (Fig. 1)
2. Remove the FRONT assembly
3. Remove the screws securing the POWER SWITCH BRACKET. (Fig. 7)
4. Remove the B-P SWITCH HOLDER and remove the POWER SWITCH BRACKET. (Fig. 7)
5. Remove the screws attaching POWER PCB assembly. (Fig. 7)
6. Disconnect all the connectors connected to the PRINTER UNIT.
7. Disconnect CONNECTORS DS, FM, PS, SH, SM connected to CPU PCB.
8. Remove the screws securing the PRINTER UNIT (Fig. 8)
9. Slide the PRINTER assembly to the front and remove it.
10. When reassembling, reverse the procedure.

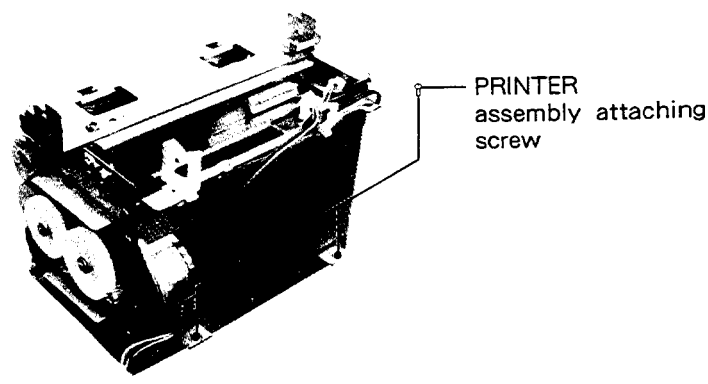
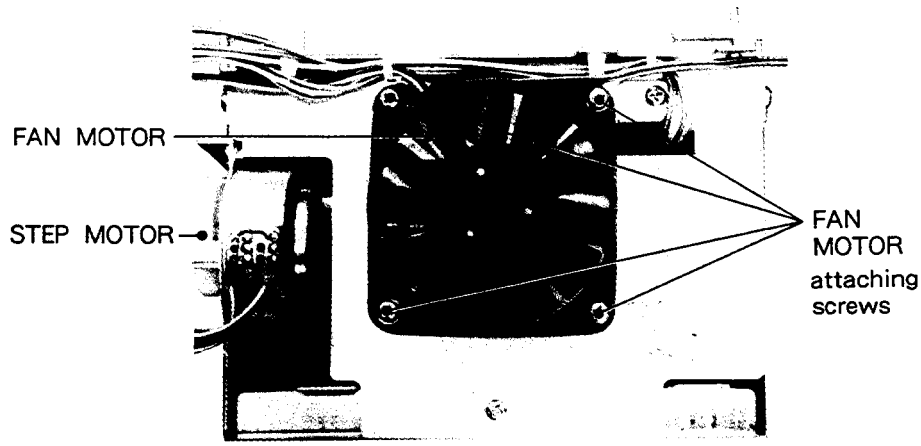
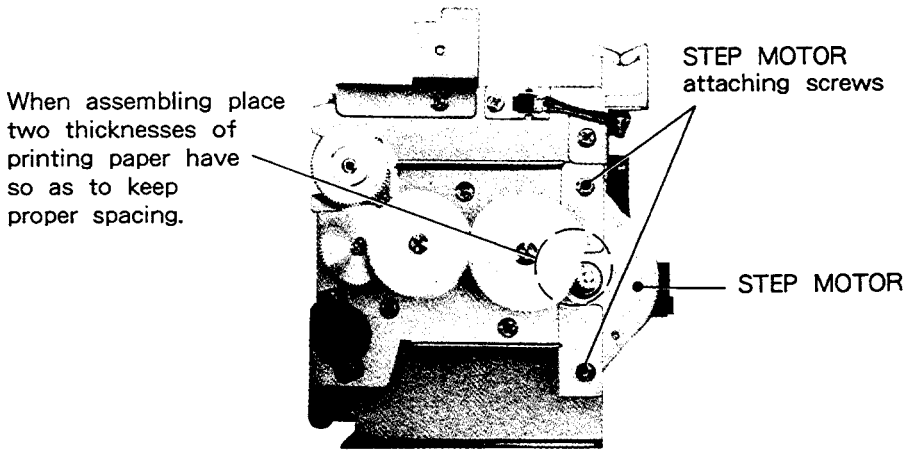


Fig. 8

ASSEMBLY

Replacement of FAN MOTOR	1. Remove the PRINTER UNIT. 2. Remove screws securing the FAN MOTOR. (Fig. 9) 3. When re-assembling, reverse the procedure.  **Fig. 9**
Replacement of STEP MOTOR	1. Remove the PRINTER UNIT. 2. Remove the STEP MOTOR attaching screws. (Fig. 10) 3. When re-assembling, reverse the procedure.  **Fig. 10**
Replacement of PLATEN ROLLER	1. Remove the DOOR assembly. 2. Remove an E-RING on the left side of the PLATEN ROLLER. (Fig. 11) 3. Remove BEARINGS. (Fig. 11) 4. Slide the PLATEN ROLLER to the right and remove it. 5. When re-assembling, reverse the procedure. (Note) Be careful of the direction of bearings.

Replacement of PLATEN ROLLER

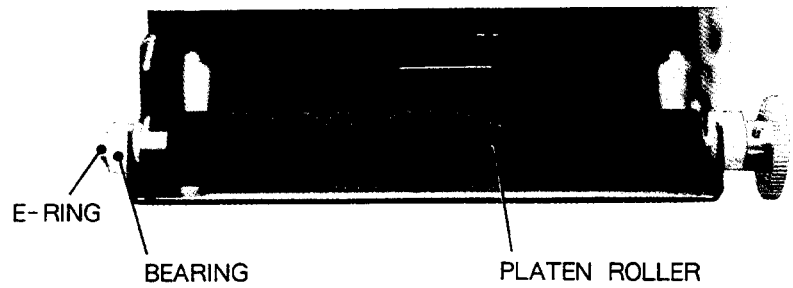


Fig. 11

Replacement of PAPER HOLDER

1. Remove the PRINTER UNIT.
2. Remove E-RINGS (both sides) of the PAPER SHAFT. (Fig. 12)
3. Pull out the PAPER SHAFT to right side.
   (Note)
   Be careful not to lose the door spring which comes off in the above process. (Fig. 12)
4. Remove the PAPER HOLDER to your side.
5. When re-assembling, reverse the procedure.

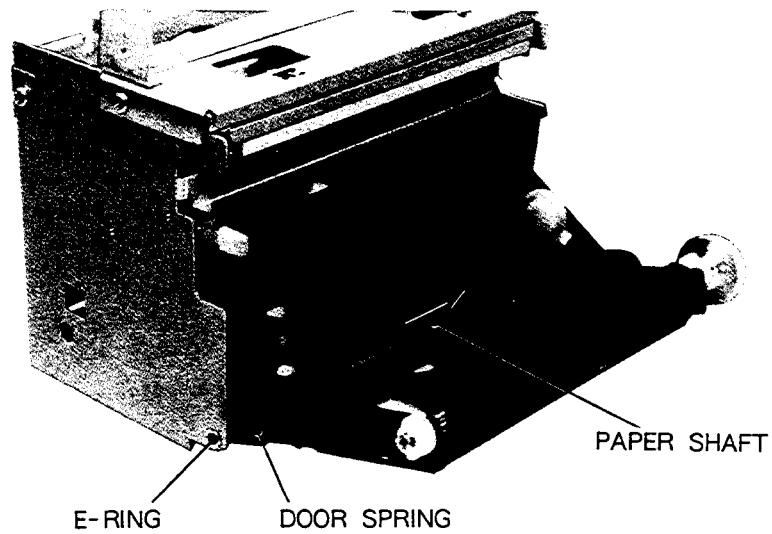


Fig. 12

Replacement of the HEAD assembly

1. Remove the CABINET. (Fig. 1)
2. Remove the FRONT assembly.
3. Remove the screws securing POWER SWITCH BRACKET. (Fig. 7)
4. Remove the B-P SWITCH HOLDER and remove the POWER SWITCH BRACKET. (Fig. 7)
5. Remove the screws securing the UPPER PLATE. (Fig. 13)
   (Note)
   The HEAD SPRING is held with the UPPER PLATE. Be careful that the HEAD SPRING does not jump up and get lost.
6. Disconnect all the connectors connected to the HEAD assembly.
7. Remove the screws securing the HEAT SINK. (Fig. 13)

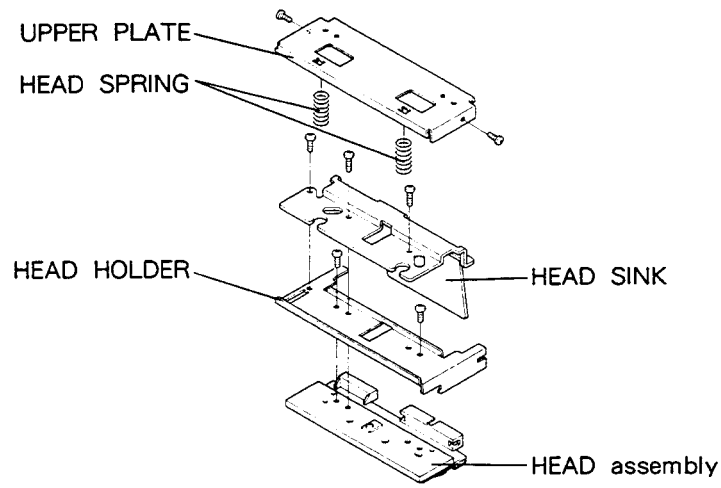


Fig. 13

8. Hold up the front part of the HEAD HOLDER, slide it to your side and remove it.
9. Remove screws securing the HEAD assembly.
   (Note)
   Be careful not to touch the HEAT GENERATING PART. (Fig. 14)
10. When re-assembling, reverse the procedure.
    (Note)
    When fixing the HEAD assembly and the HEAD HOLDER with screws, use the GAUGE BAR and TIGHTEN screws after confirming that the holes are aligned.

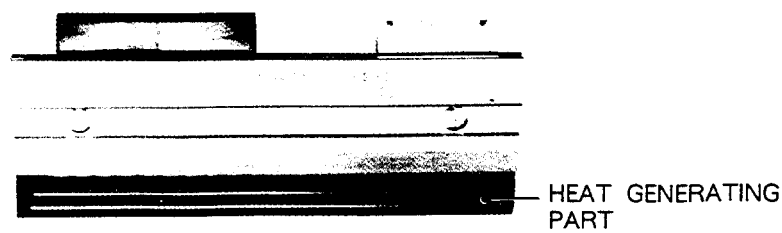


Fig. 14

Replacement of the HEAD assembly

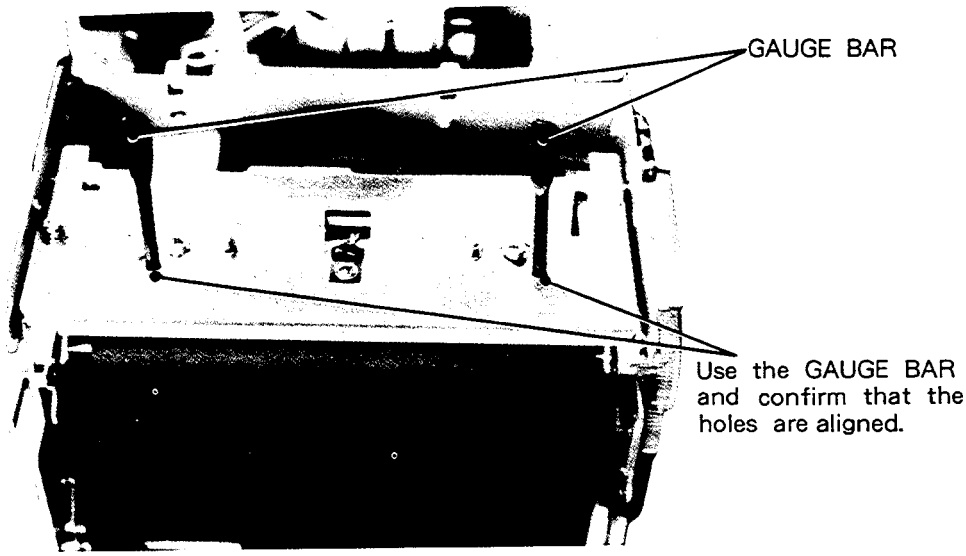


Fig. 15

CLEANING METHOD

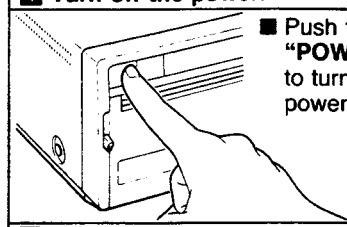
Cleaning of THERMAL HEAD

When thermal head is dirty with dust or other dirt, rain-drop patterns or white vertical lines may appear on the printed picture.
In this case, use the attached cleaning sheet or a THERMAL HEAD CLEANER PEN TH-2000 (859C425050) (which can be purchased separately) in the following manner.

※ Do not use a russet CLEANING PAPER (parts No. ; 857P001030). Because it may damage the THERMAL HEAD.

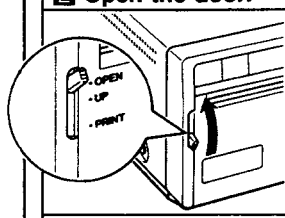
● How to use the CLEANING PAPER

1 Turn off the power.



■ Push the **"POWER"** switch to turn off the power.

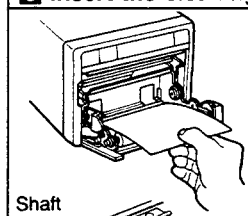
2 Open the door.



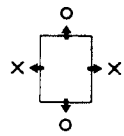
■ Flip up the left side lever to the **"OPEN"** position.

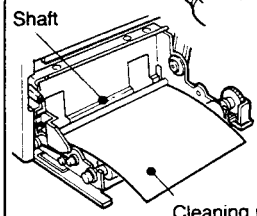
• The door opens.

3 Insert the cleaning paper.



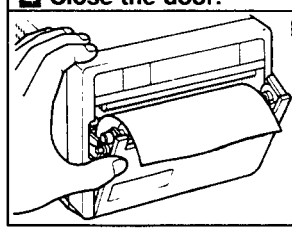
■ Insert the cleaning paper into the set.





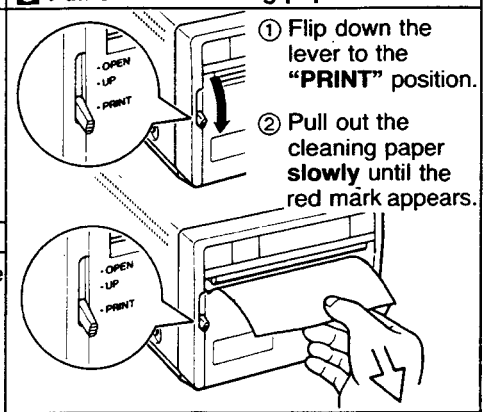
■ Insert the cleaning paper end under the shaft in the set.

4 Close the door.



■ Close the door without taking out the cleaning paper.

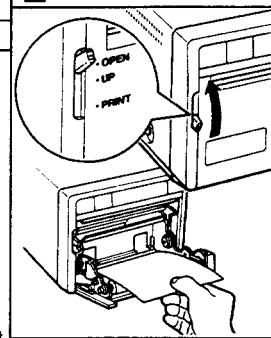
5 Pull out the cleaning paper.



① Flip down the lever to the **"PRINT"** position.

② Pull out the cleaning paper **slowly** until the red mark appears.

6 Take out the cleaning paper.



① Open the door.

② Take out the cleaning paper.

7 Verify the cleaning effect.

■ Repeat the steps 3-6 1 or 2 times, and print 2-3 sheets to verify the cleaning effect.

CAUTION:
If the symptom of the stained head would not be corrected even after cleaning, your set needs repairing. Contact the your dealer.
Avoid pulling out the cleaning paper abruptly or exceeding the red mark. Uneven printing or other defects may result.

● How to use THERMAL HEAD CLEANER PEN

1. Draw out the pen from the body and pour appropriate amount of cleaning solvent to the pen body.
   - When the pen core becomes dirty, replace it with the spare core.
   (Note) Move the cleaner pen parallel to the heat generating part (brown part).
   - Since the cleaning solvent is inflammable, close the cap after use and be particularly careful against fire.
   - Keep it in a cool, dark place with no direct exposure to the sun.

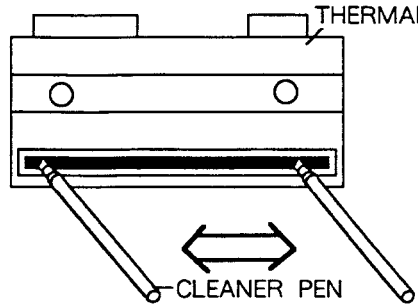


Fig 16

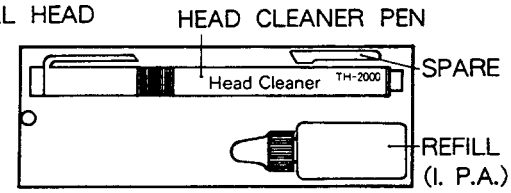


Fig 17 HEAD CLEANER PEN

(Separate purchase jig No. : 859C425050)

Cleaning of PLATEN ROLLER

When the PLATEN ROLLER is very dirty print quality may be devastated. In such cases, clean the platen roller by the following procedure.

1. Open the DOOR or the SET so that the PLATEN ROLLER can be cleaned.
2. Check the PLATEN ROLLER. If dirt or dust is adhered, clean the ROLLER using the blower brush shown in Fig. 19.
3. When the PLATEN ROLLER is particularly dirty, use alcohol and clean it with a tooth brush while taking care not to damage the ROLLER.
4. When the cleaning is finished, check that normal printing is performed.

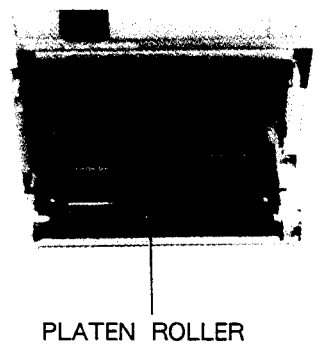
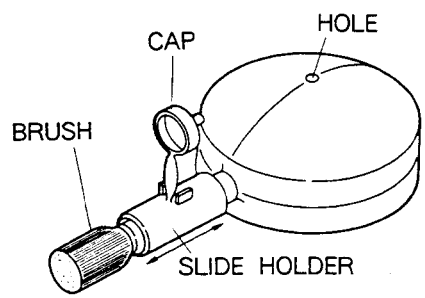


Fig. 18

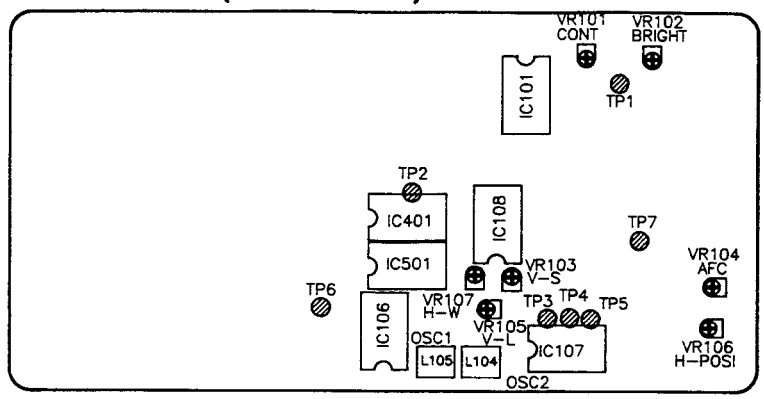


BLOWER BRUSH
(PARTS No. 859D048010)

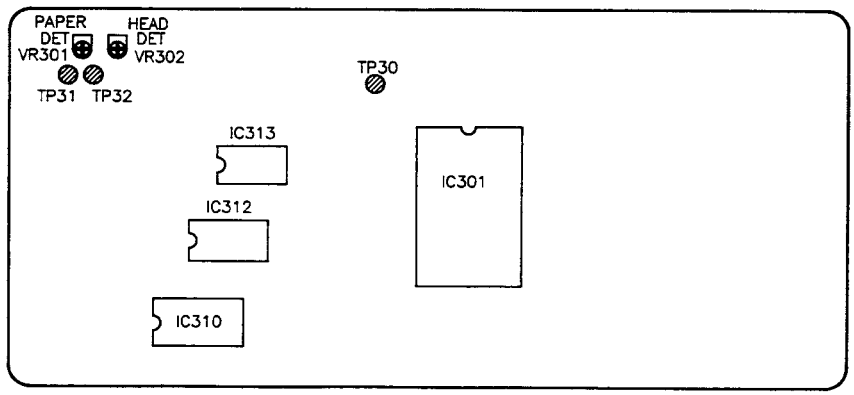
Fig. 19

LOCATION AND CONTROL ON PCB

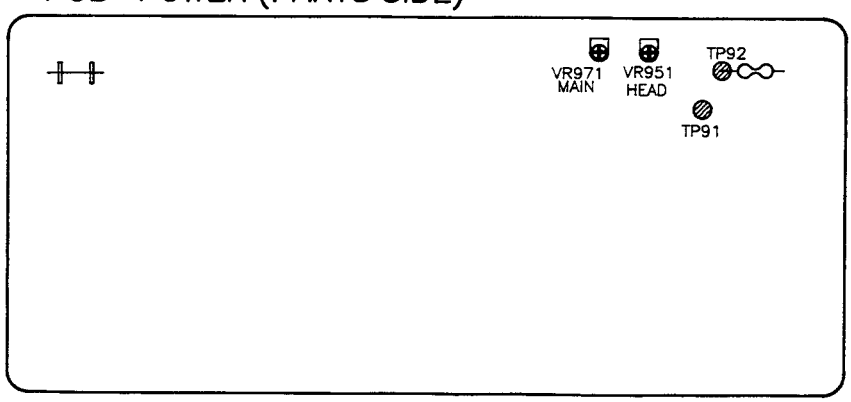
PCB–VIDEO (PARTS SIDE)



PCB–CPU (PARTS SIDE)



PCB–POWER (PARTS SIDE)



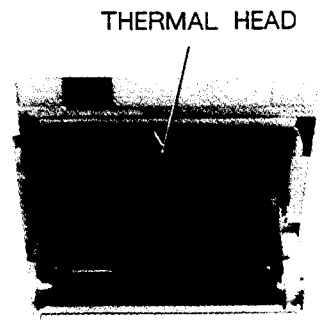
Adjustment

Initial setting

Make the following setting before adjustments.

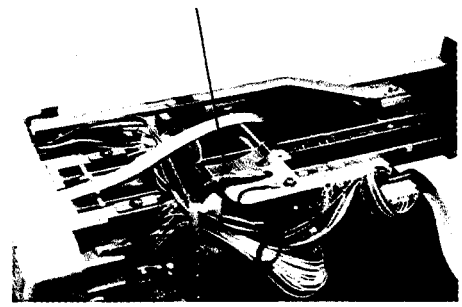
Setting point			Setting
S101	#8	EXTRA MODE2/FUNC.	
MODE1	#7	FUNCTION SPEC./NOR.	MODE2 NOR.
	#6	RESOLUTION FINE/NOR.	NOR.
	#5	LINES 525/625	525
	#4	AFC OFF/ON	OFF
	#3	PAL-TRAP OFF/ON	OFF
	#2	NTSC-TRAP OFF/ON	OFF
	#1	IMPEDANCE 75Ω/HIGH	75Ω
S301	#8	SCAN	
MODE2		FIELD/FRAME	FRAME
	#7	IMAGE NEGA./POSI.	POSI.
	#6	DIRECTION REV./NOR.	NOR.
	#5	———	(OFF)
	#4	ASPECT 1:1/4:3	4:3
	#3	PAPER SUPER/H.D.	H.D.
	#2	———	(OFF)
	#1	——— (BUZZER)	ON

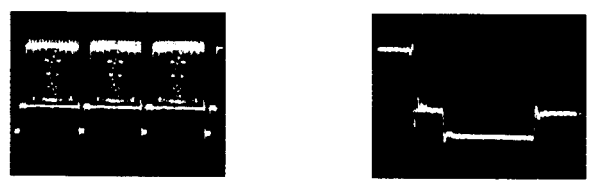
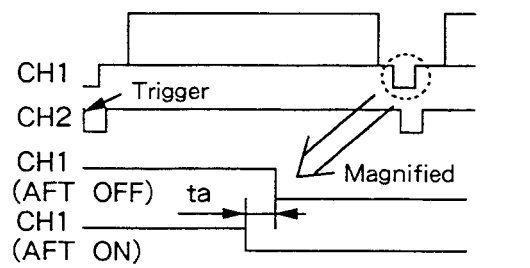
Setting point		Setting
POWER	OFF/ON	OFF
FRONT-PANEL	PAPER	K65HM
LEVER	OPEN/ UP/PRINT	UP
REMOTE	INPUT TERMINAL	Remote
VIDEO IN	INPUT TERMINAL	Monoscope
VIDEO OUT	OUTPUT TERMINAL	Monitor
AC IN	POWER INPUT	220V±5% 50Hz 240V±5% 50Hz

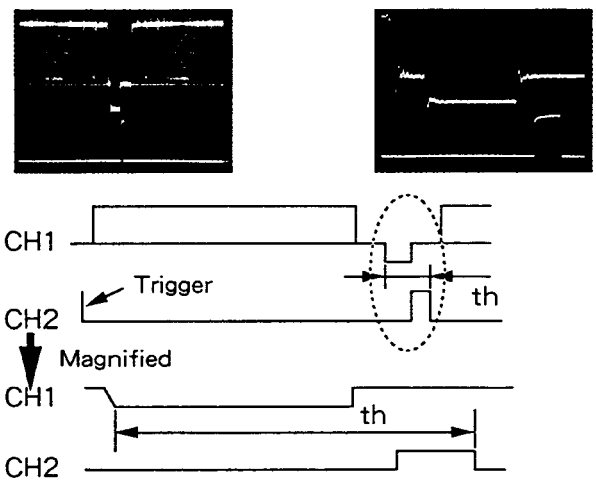
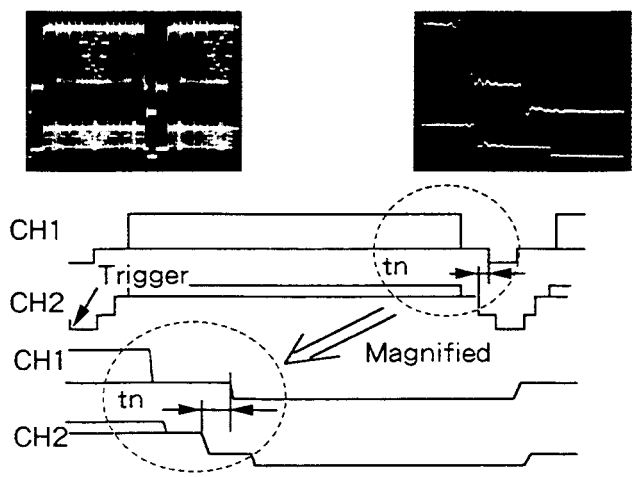
Adjustment item	Adjustment point	Adjustment method
Adjustment of Supply voltage	VR971,TP91 PCB-POWER	1. Connect a voltmeter + to TP91 and − to the metallic board of chassis. Turn VR971 to 90 degree angle counter-clockwise . 2. Turn on POWER SW. 3. Adjust the voltage to 25V ± 0.5V with VR971.
Initialization of EEPROM		* After exchange of IC309 (EEPROM) ,initicial setting should be done according to the following. 1. Turn off POWER SW. 2. Turn on POWER SW while pressing both BRIGHT button and PRT − S button . 3. Release BRIGHT button and PRT − S button after confirming that the LED display changes as follows.
Adjustment of Main voltage/ Head voltage	VR971/VR951, TP91/TP92 PCB-POWER	1. Calculate E1 and E2 with the equation in below from the resistance value indicated on the HEAD. $E2 = (24\sqrt{R/2075})$ [v] ····· Refer to Conversion Table. E1 = (E2 + 2.5) [v] 2. Connect + of a voltmeter to TP91 emitter of Q952 and − to the chassis metal plate and adjust with VR971 so that the reading is E1 ± 0.05V. 3. Connect + of a voltmeter to TP92 and − to the chassis metal plate. 4. Adjust with VR951 so that the reading of the voltmeter is E2 ± 0.05V. 5. Remove the voltmeter. 

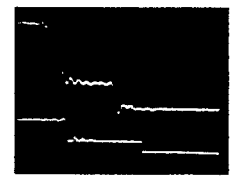
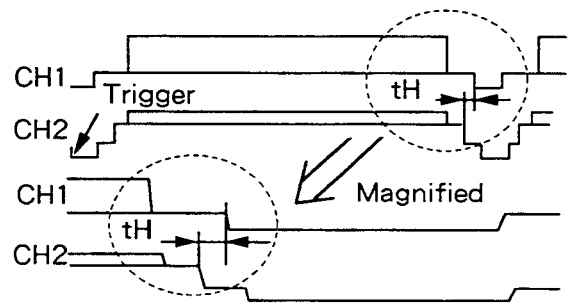
HEAD VOLTAGE TABLE, E2 as a function of R

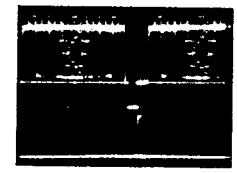
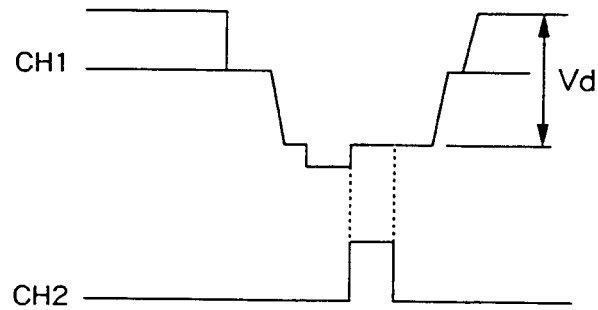
RESISTANCE (3 significant figures)	RESISTANCE (4th figure) Ω									
	0	1	2	3	4	5	6	7	8	9
R=1760			22.116V	22.122V	22.129V	22.135V	22.141V	22.147V	22.154V	22.160V
R=1770	22.166V	22.172V	22.179V	22.185V	22.191V	22.197V	22.204V	22.210V	22.216V	22.222V
R=1780	22.229V	22.235V	22.241V	22.247V	22.254V	22.260V	22.266V	22.272V	22.279V	22.285V
R=1790	22.291V	22.297V	22.303V	22.310V	22.316V	22.322V	22.328V	22.335V	22.341V	22.347V
R=1800	22.353V	22.359V	22.366V	22.372V	22.378V	22.384V	22.390V	22.397V	22.403V	22.409V
R=1810	22.415V	22.421V	22.428V	22.434V	22.440V	22.446V	22.452V	22.458V	22.465V	22.471V
R=1820	22.477V	22.483V	22.489V	22.496V	22.502V	22.508V	22.514V	22.520V	22.526V	22.533V
R=1830	22.539V	22.545V	22.551V	22.557V	22.563V	22.569V	22.576V	22.582V	22.588V	22.594V
R=1840	22.600V	22.606V	22.612V	22.619V	22.625V	22.631V	22.637V	22.643V	22.649V	22.655V
R=1850	22.662V	22.668V	22.674V	22.680V	22.686V	22.692V	22.698V	22.704V	22.710V	22.717V
R=1860	22.723V	22.729V	22.735V	22.741V	22.747V	22.753V	22.759V	22.765V	22.771V	22.778V
R=1870	22.784V	22.790V	22.796V	22.802V	22.808V	22.814V	22.820V	22.826V	22.832V	22.838V
R=1880	22.845V	22.851V	22.857V	22.863V	22.869V	22.875V	22.881V	22.887V	22.893V	22.899V
R=1890	22.905V	22.911V	22.917V	22.923V	22.929V	22.935V	22.942V	22.948V	22.954V	22.960V
R=1900	22.966V	22.972V	22.978V	22.984V	22.990V	22.996V	23.002V	23.008V	23.014V	23.020V
R=1910	23.026V	23.032V	23.038V	23.044V	23.050V	23.056V	23.062V	23.068V	23.074V	23.080V
R=1920	23.086V	23.092V	23.098V	23.104V	23.110V	23.116V	23.122V	23.128V	23.134V	23.140V
R=1930	23.146V	23.152V	23.158V	23.164V	23.170V	23.176V	23.182V	23.188V	23.194V	23.200V
R=1940	23.206V	23.212V	23.218V	23.224V	23.230V	23.236V	23.242V	23.248V	23.254V	23.260V
R=1950	23.266V	23.272V	23.278V	23.284V	23.290V	23.296V	23.302V	23.308V	23.314V	23.320V
R=1960	23.326V	23.331V	23.337V	23.343V	23.349V	23.355V	23.361V	23.367V	23.373V	23.379V
R=1970	23.385V	23.391V	23.397V	23.403V	23.409V	23.415V	23.421V	23.426V	23.432V	23.438V
R=1980	23.444V	23.450V	23.456V	23.462V	23.468V	23.474V	23.480V	23.486V	23.492V	23.497V
R=1990	23.503V	23.509V	23.515V	23.521V	23.527V	23.533V	23.539V	23.545V	23.551V	23.556V
R=2000	23.562V	23.568V	23.574V	23.580V	23.586V	23.592V	23.598V	23.604V	23.609V	23.615V
R=2010	23.621V	23.627V	23.633V	23.639V	23.645V	23.651V	23.656V	23.662V	23.668V	23.674V
R=2020	23.680V	23.686V	23.692V	23.697V	23.703V	23.709V	23.715V	23.721V	23.727V	23.733V
R=2030	23.738V	23.744V	23.750V	23.756V	23.762V	23.768V	23.773V	23.779V	23.785V	23.791V
R=2040	23.797V	23.803V	23.808V	23.814V	23.820V	23.826V	23.832V	23.838V	23.843V	23.849V
R=2050	23.855V	23.861V	23.867V	23.872V	23.878V	23.884V	23.890V	23.896V	23.902V	23.907V
R=2060	23.913V	23.919V	23.925V	23.931V	23.936V	23.942V	23.948V	23.954V	23.960V	23.965V
R=2070	23.971V	23.977V	23.983V	23.988V	23.994V	24.000V	24.006V	24.012V	24.017V	24.023V
R=2080	24.029V	24.035V	24.040V	24.046V	24.052V	24.058V	24.064V	24.069V	24.075V	24.081V
R=2090	24.087V	24.092V	24.098V	24.104V	24.110V	24.115V	24.121V	24.127V	24.133V	24.138V
R=2100	24.144V	24.150V	24.156V	24.161V	24.167V	24.173V	24.179V	24.184V	24.190V	24.196V
R=2110	24.202V	24.207V	24.213V	24.219V	24.225V	24.230V	24.236V	24.242V	24.247V	24.253V
R=2120	24.259V	24.265V	24.270V	24.276V	24.282V	24.287V	24.293V	24.299V	24.305V	24.310V
R=2130	24.316V	24.322V	24.327V	24.333V	24.339V	24.345V	24.350V	24.356V	24.362V	24.367V
R=2140	24.373V	24.379V	24.384V	24.390V	24.396V	24.402V	24.407V	24.413V	24.419V	24.424V
R=2150	24.430V	24.436V	24.441V	24.447V	24.453V	24.458V	24.464V	24.470V	24.475V	24.481V
R=2160	24.487V	24.492V	24.498V	24.504V	24.509V	24.515V	24.521V	24.526V	24.532V	24.538V
R=2170	24.543V	24.549V	24.555V	24.560V	24.566V	24.572V	24.577V	24.583V	24.588V	24.594V
R=2180	24.600V	24.605V	24.611V	24.617V	24.622V	24.628V	24.634V	24.639V	24.645V	24.651V
R=2190	24.656V	24.662V	24.667V	24.673V	24.679V	24.684V	24.690V	24.696V	24.701V	24.707V
R=2200	24.712V	24.718V	24.724V	24.729V	24.735V	24.740V	24.746V	24.752V	24.757V	24.763V
R=2210	24.768V	24.774V	24.780V	24.785V	24.791V	24.796V	24.802V	24.808V	24.813V	24.819V
R=2220	24.824V	24.830V	24.836V	24.841V	24.847V	24.852V	24.858V	24.864V	24.869V	24.875V
R=2230	24.880V	24.886V	24.891V	24.897V	24.903V	24.908V	24.914V	24.919V	24.925V	24.930V
R=2240	24.936V	24.942V	24.947V	24.953V	24.958V	24.964V	24.969V	24.975V	24.981V	24.986V
R=2250	24.992V	24.997V	25.003V	25.008V	25.014V	25.019V	25.025V	25.030V	25.036V	25.042V
R=2260	25.047V	25.053V	25.058V	25.064V	25.069V	25.075V	25.080V	25.086V	25.091V	25.097V
R=2270	25.102V	25.108V	25.113V	25.119V	25.125V	25.130V	25.136V	25.141V	25.147V	25.152V
R=2280	25.158V	25.163V	25.169V	25.174V	25.180V	25.185V	25.191V	25.196V	25.202V	25.207V
R=2290	25.213V	25.218V	25.224V	25.229V	25.235V	25.240V	25.246V	25.251V	25.257V	25.262V
R=2300	25.268V	25.273V	25.279V	25.284V	25.290V	25.295V	25.301V	25.306V	25.312V	25.317V
R=2310	25.323V	25.328V	25.334V	25.339V	25.345V	25.350V	25.356V	25.361V	25.366V	25.372V
R=2320	25.377V	25.383V	25.388V	25.394V	25.399V	25.405V	25.410V	25.416V	25.421V	25.427V
R=2330	25.432V	25.437V	25.443V	25.448V	25.454V	25.459V	25.465V	25.470V	25.476V	25.481V
R=2340	25.487V	25.492V	25.497V	25.503V	25.508V	25.514V	25.519V	25.525V	25.530V	25.536V
R=2350	25.541V	25.546V	25.552V	25.557V	25.563V	25.568V	25.574V	25.579V	25.584V	25.590V
R=2360	25.595V	25.601V	25.606V	25.611V	25.617V	25.622V	25.628V	25.633V	25.639V	25.644V
R=2370	25.649V	25.655V	25.660V	25.666V	25.671V	25.676V	25.682V	25.687V	25.693V	25.698V
R=2380	25.703V	25.709V	25.714V	25.720V	25.725V	25.730V	25.736V	25.741V		
R=2390										

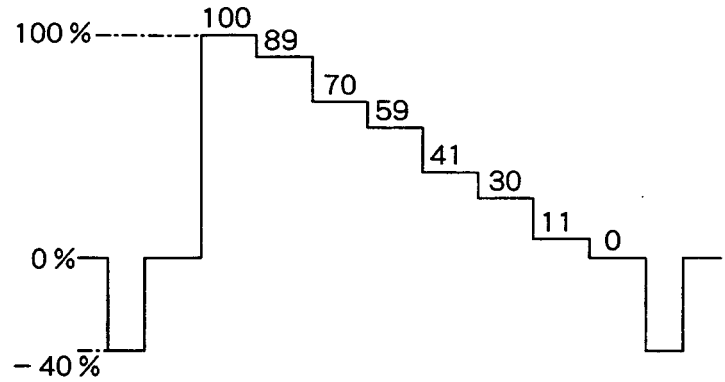
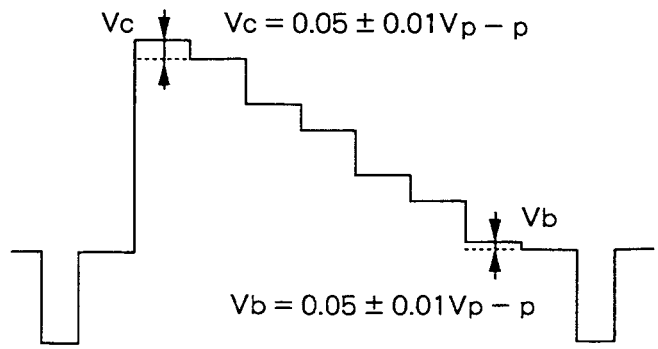
Adjustment item	Adjustment point	Adjustment method
Adjustment of Paper detection level	VR301,TP31 PCB-CPU	1. Connect + of a voltmeter to TP31 and - to the chassis metal plate. 2. Adjust with VR301 so that the reading of the voltmeter is 4.0 ± 0.1V. (Note) Before adjusting VR301 and VR302, remove the screw that fastens to the flat-cable. 3. Confirm the reading of voltmeter is under 1.0V when the door open. FLAT CABLE attaching screw 
Adjustment of Head position detecting level	VR302,TP32 PCB-CPU	1. Connect + a voltmeter to TP32 and − to the chassis metal plate. 2. Push up the lever to the Head-Up position. 3. Adjust with VR302 so that the reading of the voltmeter is 0.8 ± 0.4V. 4. Confirm the reading of voltmeter is over 4.5V when the lever at "PRINT" position. 5. Return the lever to "UP"position.
Adjustment of Vertical synchronization separation	VR103, TP1, TP3 PCB-VIDEO	1. Connect CH1 of an oscilloscope to TP1 and CH2 to TP3. 2. Trigger in the falling edge of CH2 and adjust roughly with VR103 so that the rising edge of CH2 is in the position shown below. 3. Magnify the rising edge of CH2 with delay sweep and adjust with VR103 so that tv = 18 ± 1 μ sec. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 0.2V/DIV Horizontal axis 50 μ SEC/DIV DELAY Mode Horizontal axis 5 μ SEC/DIV

Adjustment item	Adjustment point	Adjustment method
Adjustment of Horizontal synchronous pulse width	VR107,TP5 PCB-VIDEO	1. Set #4 : AFC switch of S101 (MODE) to OFF. 2. Connect CH2 of an oscilloscope to TP5. 3. Trigger in the falling edge of CH2 and magnify the pulse width tp with delay sweep. 4. Adjust with VR107 so that the pulse width of the waveform below tp is tp = 4.5 ± 0.1 μ sec. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH2 : 0.1V/DIV Horizontal axis 20 μ SEC/DIV DELAY Mode Horizontal axis 1 μ SEC/DIV
Adjustment of Horizontal AFC	VR104, TP1, TP5 PCB-VIDEO	1. Set #4 : AFC switch of S101 (MODE1) to OFF. 2. Connect CH1 of an oscilloscope to TP1 and CH2 to TP5. 3. Trigger in the falling edge of CH2. 4. Set AFC to ON and adjust with VR104 so that the phase difference between the screen center of the oscilloscope and the falling edge of CH1, ta = 0 ± 0.1 μ sec. Then, later, set #4 : AFC SW to OFF. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 0.2V/DIV Horizontal axis 20 μ SEC/DIV DELAY Mode Horizontal axis 1 μ SEC/DIV  

Adjustment item	Adjustment point	Adjustment method
Adjustment of Horizontal position	VR106, TP1, TP4 PCB-VIDEO	1. Set AFC to OFF. 2. Connect CH1 of an oscilloscope to TP1 and CH2 to TP4. 3. Trigger in the falling edge of CH2 and magnify with delay sweep. 4. Adjust with VR106 so that the phase difference between the rising edge of CH1 and the falling edge of CH2 in the Fig. below, th = 7.0 ± 0.1 μ sec. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 0.2V/DIV Horizontal axis 10 μ SEC/DIV DELAY Mode Horizontal axis 1 μ SEC/DIV 
Adjustment of Clock frequency 2	L105,TP7 PCB-VIDEO	1. Press BRIGHT button once and make the LED display ⊟□ . 2. Connect CH1 of an oscilloscope to TP1 and CH2 to TP7. 3. Trigger in the falling of CH2 and magnify the horizontally synchronous part of CH1. 4. Turn SUB-BRIGHT VR102 clockwise to full. (Note) Be sure to re-adjust SUB-BRIGHT VR102. 5. Turn L105 clockwise and adjust so that tn = 0.0 ± 0.5 μ sec. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 50mV/DIV Horizontal axis 10 μ SEC/DIV DELAY Mode Horizontal axis 0.5 μ SEC/DIV 

Adjustment item	Adjustment point	Adjustment method
Adjustment of Clock frequency 1	L104,TP7 PCB-VIDEO	1. Set # 5: RESOLUTION switch of S3018 (MODE2) to "FINE" 2. Set LEVER to print position. 3. Press BRIGHT button once and make the LED display ⊟□. 4. Connect CH1 of an oscilloscope to TP1 and CH2 to TP7. 5. Trigger in the falling of CH2 and magnify the horizontally synchronous part of CH1. 6. Turn SUB-BRIGHT VR102 clockwise to full. (Note) Be sure to re-adjust SUB-BRIGHT VR102. 7. Turn L104 and adjust so that tH = 0.0 ± 0.5 μ sec. 8. Push up the LEVER to the Head-up position. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 50mV/DIV Horizontal axis 10 μ SEC/DIV DELAY Mode Horizontal axis .5 μ SEC/DIV  

Adjustment item	Adjustment point	Adjustment method
Adjustment of Monitor output level	VR105,TP7 PCB-VIDEO	1. Make this adjustment after disconnecting the monitor connected to the VIDEO OUT terminal and terminate with 75 Ω ± 1 %. 2. Press BRIGHT button and make the LED display ⊔□ . 3. Connect CH1 of an oscilloscope to TP7 and CH2 to TP4. 4. Trigger in the falling of CH2 and see the horizontally synchronous part of CH1. 5. Turn SUB-BRIGHT VR102 and SUB-CONTRAST VR101 clockwise to full. (Note) If is necessury to perform readjustment of SUB-BRIGHT VR102 and SUB-CONTRAST VR101. 6. Adjust with VR105 so that the voltage in the Fig. below Vd = 0.714 ± 0.01Vp-p Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 20mV/DIV CH2 : 0.2mV/DIV Horizontal axis 10 μ SEC/DIV  

Adjustment item	Adjustment point	Adjustment method
Sub-Contrast/ Sub-Bright adjustment	VR101/VR102 TP7 PCB-VIDEO	1. Input a monochromatic video signal shown in below to the Video Input terminal. 100 % = 0.714 ± 0.01Vp − p  2. Press BRIGHT button and make the LED display ⊟□ . 3. Connect CH1 of an oscilloscope to TP7 and CH2 to TP4. 4. Trigger in the rising of CH2. 5. Adjust with VR102 (Vb adjustment) and VR101 (Vc adjustment) so that the voltages Vb and Vc shown in the Fig. below are the following values. Probe 10 : 1 Setting of the oscilloscope Vertical axis CH1 : 10mV/DIV CH2 : 0.2mV/DIV Horizontal axis 10 μ SEC/DIV 

PARTS LIST

MODEL : P66B/P66E

In order to expedite delivery of replacement part orders.

Specify : 1. Model number/Serial number
2. Part number and Description
3. Quantity

Unless full information is supplied, delay in execution of orders will result.

⚠ : Critical components ○ : New Parts

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	± 20	± 30	+ 10 − 10	+ 40 − 20	+ 80 − 20	+ 100 − 0	+ 30 − 10

MARK	B	C	D	F	G
TOLERANCE (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

ABBREVIATION

[B] P66B

[E] P66E

[B] : P66B [E] : P66E

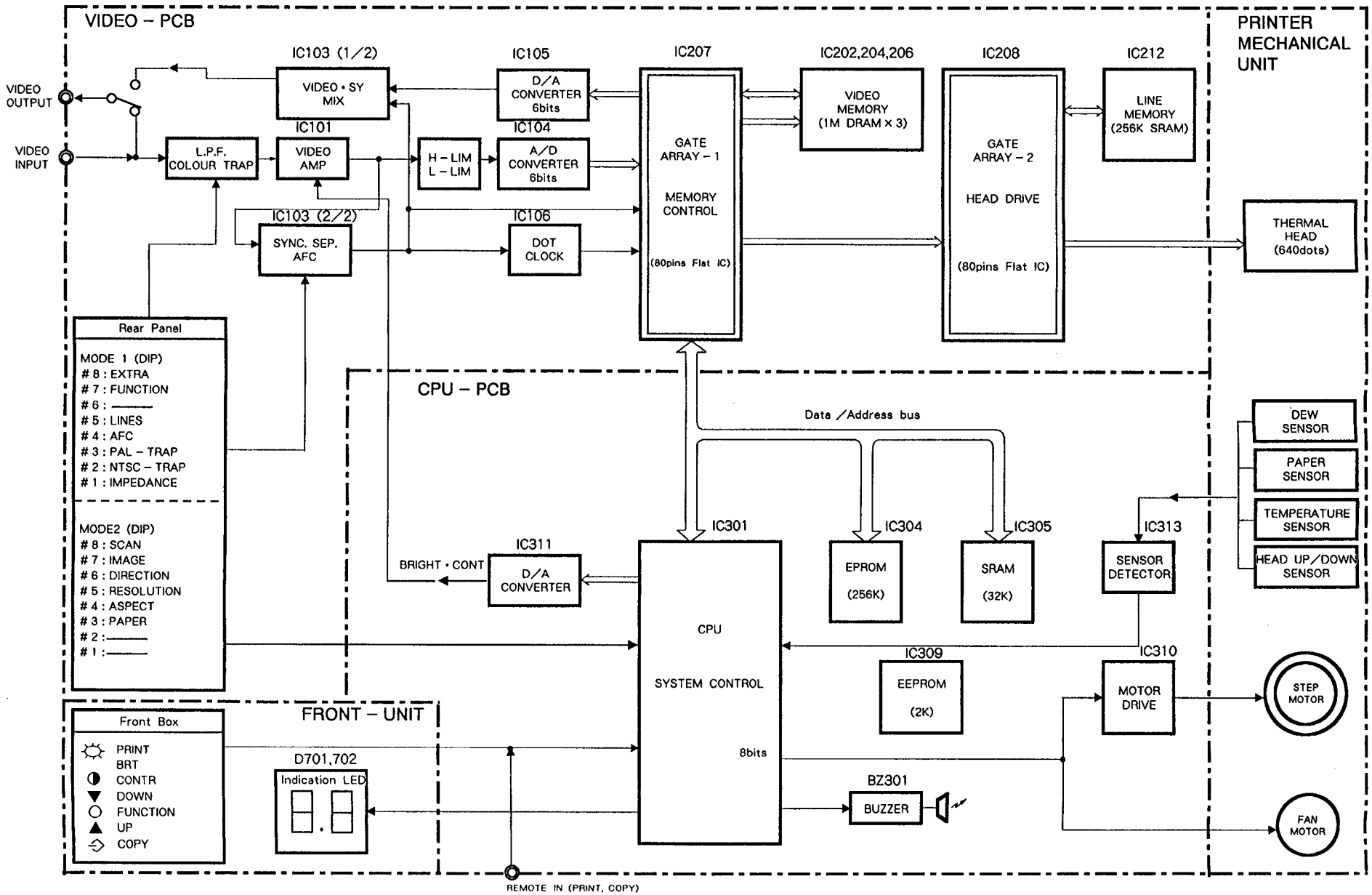
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		INTEGRATED CIRCUITS	
IC101	272P499010	IC	HA11465A
IC102	272P229010	IC	μPC812C
IC103	272P151010	IC	NJM2217L
IC104	272P086010	IC	MB40576
IC105	272P087010	IC	MB40776
IC106	263P300020	IC	TC74HC00P
IC107	266P091010	IC	SN74LS221N
IC108	266P091010	IC	SN74LS221N
IC109	272P529010	IC	L78N09
IC202	263P133010	IC	MCM514256AZ10/M5
IC204	263P133010	IC	MCM514256AZ10/M5
IC206	263P133010	IC	MCM514256AZ10/M5
IC207	263P184010	IC	μPD65042GF-432-3
IC208	263P185010	IC	μPD65050GF-126-3
IC209	263P186010	IC	TC74HC245AP
IC210	263P186010	IC	TC74HC245AP
IC211	263P186010	IC	TC74HC245AP
IC212	263P134010	IC	MCM60L256AP10/HM
IC301	263P748010	IC	M50734SP
IC302	266P130020	IC	PST520C
IC303	266P882010	IC (TTL)	SN74LS373N
IC304	263P182060	IC	HN27C256AG-12 [B]
IC304	263P182050	IC	HN27C256AG-12 [E]
IC305	263P622020	IC	HM6264ALSP10
IC306	266P834030	IC	SN74LS10N
IC307	266P923040	IC	NJM78L05A
IC308	266P130020	IC	PST520C
IC309	263P686010	IC	M6M80021P
IC310	272P175010	IC	M54567P
IC311	263P869010	IC	μPD6326C
IC312	263P183010	IC	M54972P
IC313	266P727040	IC	μPC339C/LM339N
IC314	266P840020	IC	SN74LS00N
IC901	272P564010	IC	M51977P
IC904	272P500010	IC	HA17431P
IC905	272P240010	IC	M5237L
IC906	272P502010	IC	μPC2412HF
IC907	272P501010	IC	μPC2405HF
		TRANSISTORS	
	939P414010	WIRE REM TRANSISTOR	[B]
Q 101	260P559030	TRANSISTOR	2SC1740S
Q 102	260P559030	TRANSISTOR	2SC1740S
Q 103	260P560050	TRANSISTOR	2SA933S-Q
Q 104	260P560050	TRANSISTOR	2SA933S-Q
Q 105	260P559030	TRANSISTOR	2SC1740S
Q 106	260P559030	TRANSISTOR	2SC1740S
Q 107	260P603010	TRANSISTOR	DTA124ES/UN4112
Q 108	260P255040	TRANSISTOR	2SA950-Y
Q 109	260P632010	TRANSISTOR	DTC124ES
Q 301	260P632010	TRANSISTOR	DTC124ES
Q 302	260P603010	TRANSISTOR	DTA124ES/UN4112
Q 303	260P632010	TRANSISTOR	DTC124ES
Q 304	260P632010	TRANSISTOR	DTC124ES
Q 306	260P416030	TRANSISTOR	2SC2274-F
Q 307	260P559030	TRANSISTOR	2SC1740S
Q 308	260P632010	TRANSISTOR	DTC124ES
Q 309	260P632010	TRANSISTOR	DTC124ES
Q 310	260P255040	TRANSISTOR	2SA950-Y
Q 311	260P255040	TRANSISTOR	2SA950-Y
Q 312	260P632010	TRANSISTOR	DTC124ES
Q 313	260P632010	TRANSISTOR	DTC124ES
Q 314	260P632010	TRANSISTOR	DTC124ES
Q 315	260P560050	TRANSISTOR	2SA933S-Q
Q 316	260P560050	TRANSISTOR	2SA933S-Q
⚠ Q 901	260P699010	TRANSISTOR	2SK1358
Q 902	260P642010	TRANSISTOR	2SB883
		DIODES	
D 101	264P045040	DIODE	1S2471
D 102	264P045040	DIODE	1S2471
D 302	264P045040	DIODE	1S2471
D 303	264P045040	DIODE	1S2471
D 304	264P045040	DIODE	1S2471
D 305	264P045040	DIODE	1S2471
D 306	264P045040	DIODE	1S2471
D 307	264P045040	DIODE	1S2471
D 308	264P045040	DIODE	1S2471
D 309	264P485030	DIODE	RD6.8FB3
D 310	264P045040	DIODE	1S2471
D 701	264P579020	LIGHT EMITTING DIODE	GL9E030
D 702	264P579020	LIGHT EMITTING DIODE	GL9E030
⚠ D 901	264P535010	DIODE	RBV-608
D 902	264P522010	DIODE	RU 1P
D 903	264P578010	DIODE	RG 2A
D 904	264P521030	DIODE	EU 2
D 906	264P580020	DIODE	ESAC92M-02F60
D 907	264P580020	DIODE	ESAC92M-02F60
D 908	264P580020	DIODE	ESAC92M-02F60
D 909	264P470060	DIODE	EQA02-32A/RD33EB2
D 910	264P489010	DIODE	RD16FB1
D 911	264P484040	DIODE	RD5.6FB3
D 912	264P045040	DIODE	1S2471
D 913	264P045040	DIODE	1S2471
D 914	264P045040	DIODE	1S2471
D 915	264P045040	DIODE	1S2471
		FILTERS	
CF201	299P119010	CERAMIC RESONATOR	
CF301	299P110010	CERAMIC RESONATOR	
		COILS	
L 101	320P022020	TRAP COIL	4.43MHz
L 102	349P064020	TRAP COIL	
L 103	321C031040	RF COIL	10μH-K
L 104	349P179010	OSCILLATOR COIL	
L 105	349P179010	OSCILLATOR COIL	

[B] : P66B [E] : P66E

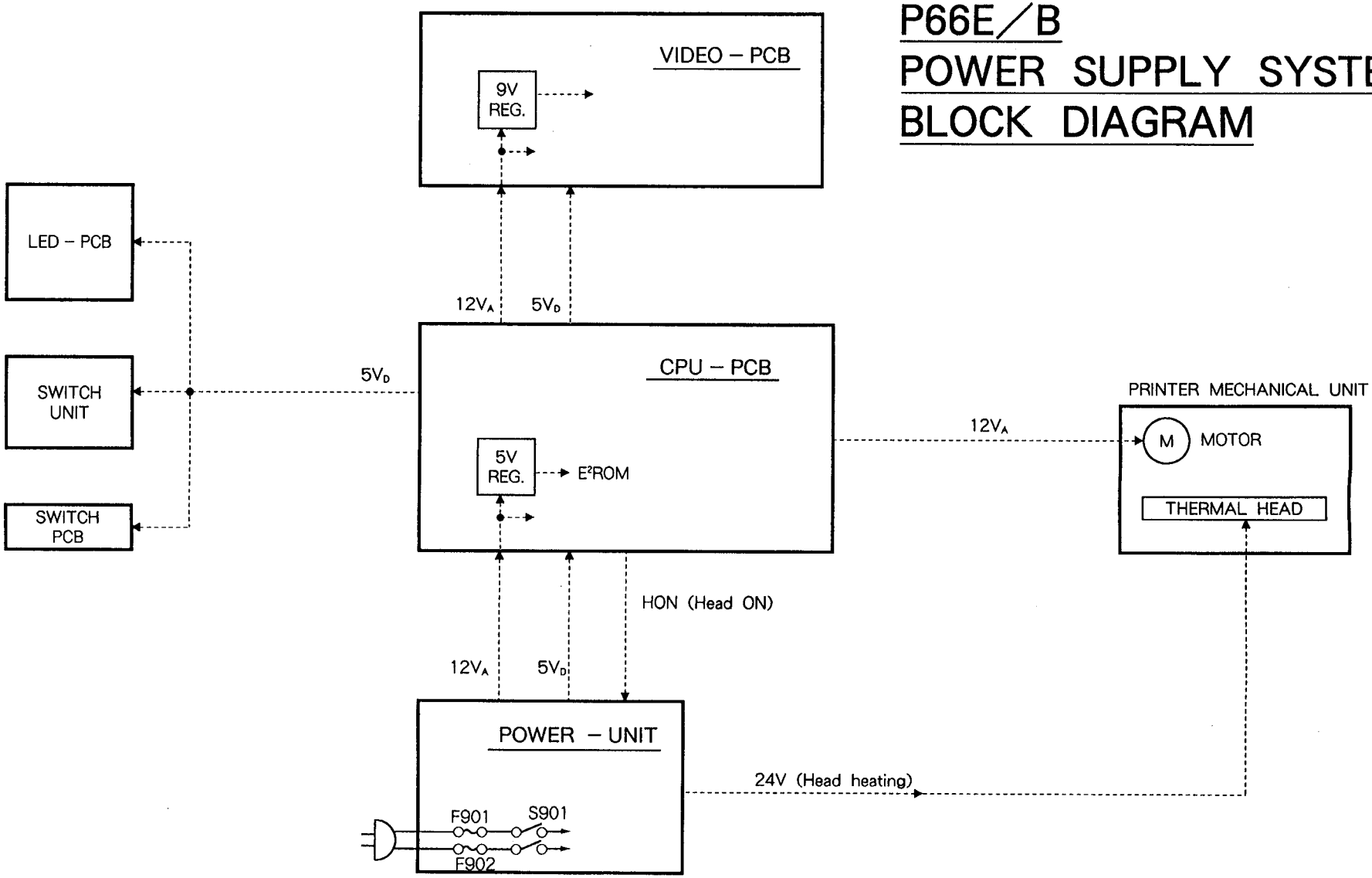
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
L 201	325C120090	PEAKING COIL	4.7μH-K	
L 325	411D009020	FERRITE CORE FILTER		
L 326	411D009020	FERRITE CORE FILTER		
L 327	411D009020	FERRITE CORE FILTER		
L 328	411D009020	FERRITE CORE FILTER		
⚠ L 901	351P047080	LINE FILTER		
L 902	351P082010	CHOKE COIL		
		TRANSFORMERS		
⚠ T 901	350P501010	POWER		
		VARIABLE RESISTORS		
UR951	127C190090	VR-SEMIFIXED	1/10W B20K-M	
VR101	127C180040	VR-SEMIFIXED	1/5W B1KΩ-M	
VR102	127C180050	VR-SEMIFIXED	1/5W B2KΩ-M	
VR103	127C091010	VR-SEMIFIXED	1/5W B50KΩ-M	
VR104	127C190080	VR-SEMIFIXED	1/5W B10KΩ-M	
VR105	127C080070	VR-SEMIFIXED	1/5W B5KΩ-M	
VR106	127C190070	VR-SEMIFIXED	1/5W B5KΩ-M	
VR107	127C090070	VR-SEMIFIXED	1/5W B5KΩ-M	
VR301	127C181020	VR-SEMIFIXED	1/5W B100KΩ-M	
VR302	127C181020	VR-SEMIFIXED	1/5W B100KΩ-M	
VR971	127C190070	VR-SEMIFIXED	1/5W B5KΩ-M	
		RESISTORS		
R 313	103P544010	NETWORK	1/8W 22KΩ-JX4	
R 316	103P574010	NETWORK	1/8W 22KΩ-JX7	
R 317	103P544010	NETWORK	1/8W 22KΩ-JX4	
		CAPACITORS AND TRIMMERS		
⚠ C 906	189P094050	AC CERAMIC	ACT4K E1000P	
⚠ C 907	189P094050	AC CERAMIC	ACT4K E1000P	
⚠ C 908	185D056040	ELECTROLYTIC-C	H400V330μF-M	
		SWITCHES		
	702C916010	CASE SWITCH		
	439C030030	MEMBRANE SWITCH		[B]
	439C030020	MEMBRANE SWITCH		[E]
S 701	432P101010	KEY BOARD SWITCH		
⚠ S 901	432C067010	PUSH SWITCH		
		MISCELLANEOUS		
	451C121010	POWER JACK(3P)		[B]
	451D046010	AC POWER JACK(3P)		[E]
BZ301	286P006010	BUZZER		
⚠ F 901	283D047060	FUSE	3.15A-T	
⚠ F 902	283D047060	FUSE	3.15A-T	
IC304	449P013090	IC SOCKET		
J 301	451C066010	JACK		
K 101	287P036030	RELAY	G5A-237P-DC12V	
⚠ PC901	268P049010	PHOTO COUPLER		
⚠ PC902	268P049010	PHOTO COUPLER		
⚠ R 940	299P132010	PROTECTOR		
⚠ R 941	299P132010	PROTECTOR		
R 942	299P087060	PROTECTOR		

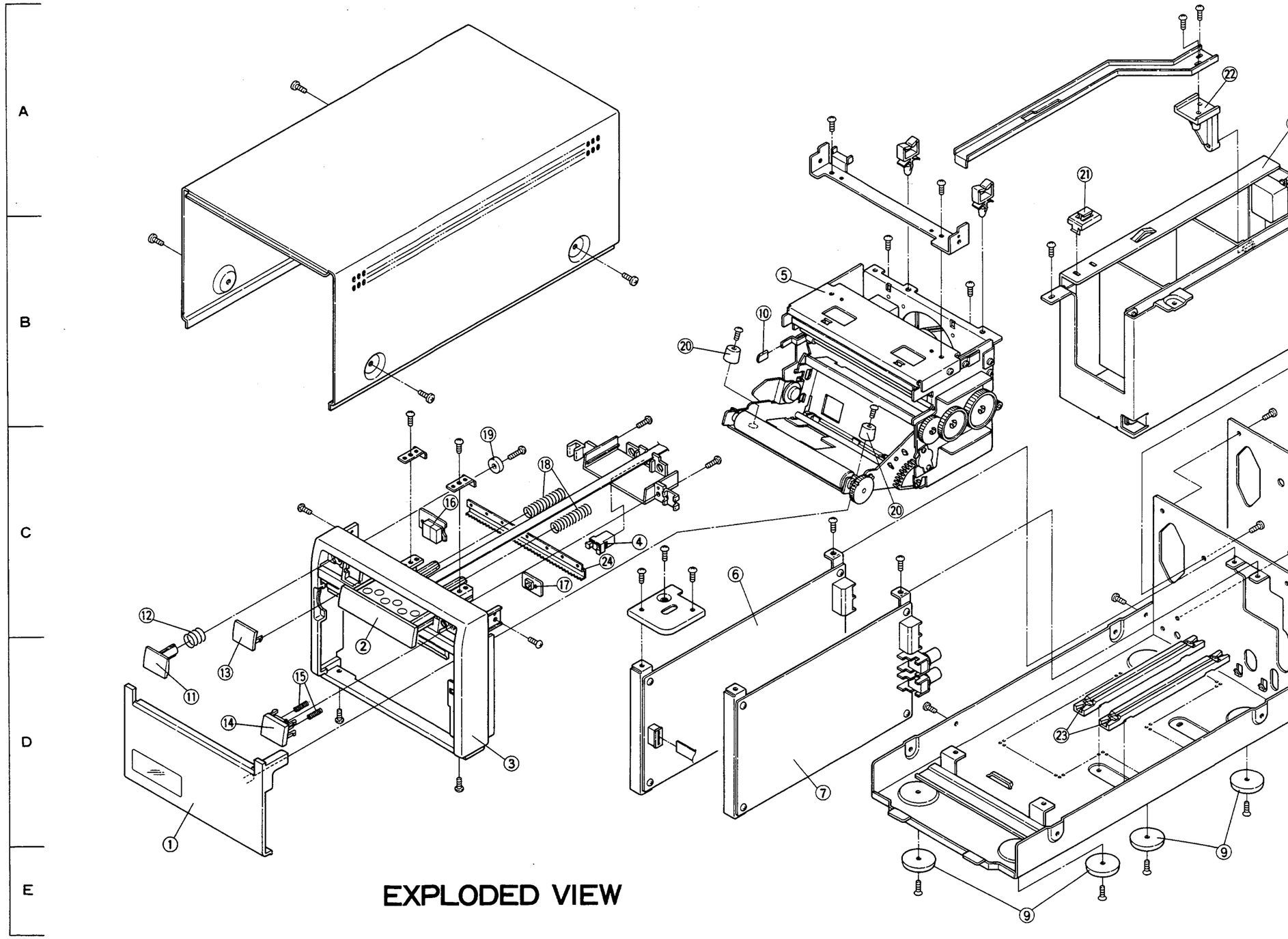
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
		PRINTED CIRCUIT BOARD ASSY'S		
	936C003006	CPU PCB ASSY		[B]
	936C003005	CPU PCB ASSY		[E]
	936B008001	POWER PCB ASSY		
	936C002004	VIDEO PCB ASSY		
		MECHANICAL PARTS		
	669D199020	SCREW	D=M4X0.7(10	[B]
	669D212020	SCREW	D=3 L=8 83A	
	669D212060	SCREW	D=3L=3 80AF	[B]
	572D224010	SPRING KNOB		[B]
	570D582040	SPRING WIRE		[B]
		COSMETIC PARTS		
⚠	242C897010	AC POWER CORD		[B]
⚠	242C795090	AC POWER CORD		[E]
	702C941080	CABINET ASSY		[B]
	734D517020	BUTTON POWER		[B]
	734D516020	BUTTON SWITCH		[B]
	710A058020	CABINET		[E]
	761C273010	DOOR CATCH	25C781	
	734D518010	KNOB		
	771D051010	PAD		
	939C028010	PRINTER UNIT		
	591B708060	REAR PANEL		[B]
	702C921040	DOOR UNIT		
	701A478010	FRONT PANEL UNIT		
J 101	452D199010	CONNECTOR-BNC		
J 102	452D199010	CONNECTOR-BNC		
S 101	431C078010	DIP SWITCH		
S 301	431C078010	DIP SWITCH		
⚠ TH901	264P582010	TRIAC	TM861S-L	
		PACKING PARTS AND ACCESSORY		
	242D232010	CABLE	BNC 2.0M	
	803B673010	PACKING CUSHION		
	871C833080	INSTRUCTION BOOK		[B]
	871C833090	INSTRUCTION BOOK		[E]
	831D169010	PACKING BAG		
	831D183040	PACKING BAG		
	831D193040	PACKING BAG		[B]
	801C050020	PACKING CASE		[B]
	801C050030	PACKING CASE		[E]
	831D246030	PACKING SHEET		
	871C402070	SERVICE MANUAL		
	939P221060	REMOTE HAND UNIT		[E]

P66E/B BLOCK DIAGRAM



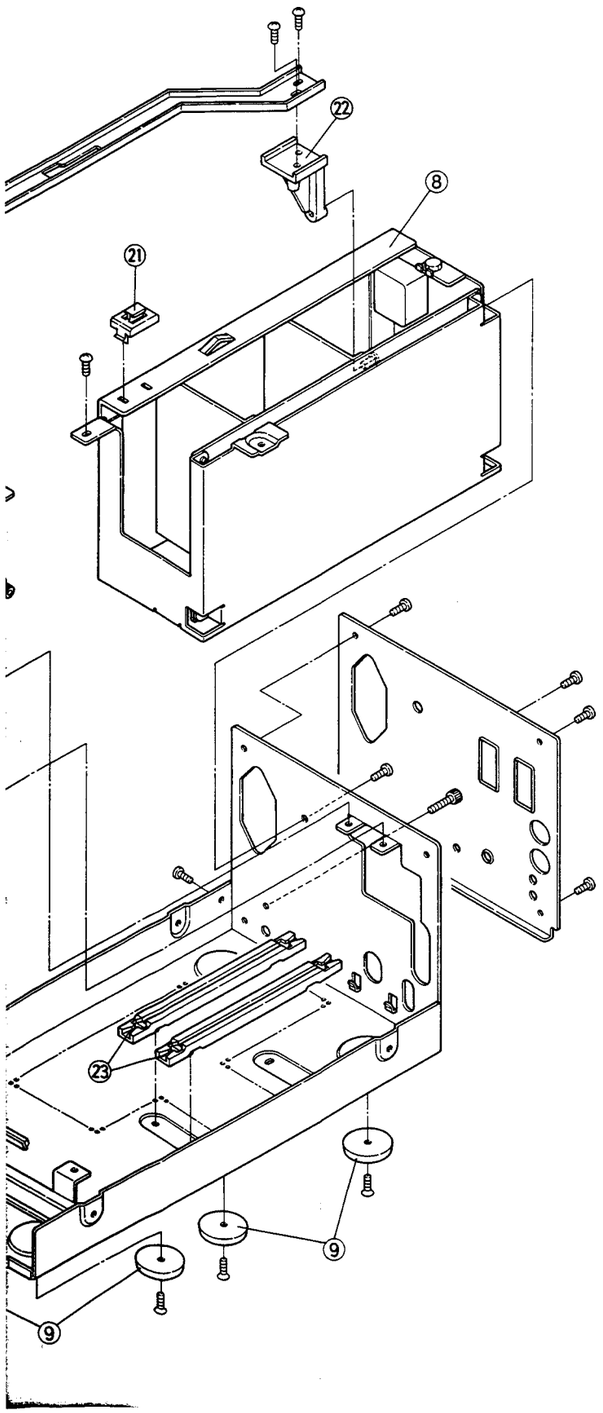
P66E/B
POWER SUPPLY SYSTEM
BLOCK DIAGRAM




1
2
3
4
5
6
A
B
C
D
E
EXPLODED VIEW

PARTS LIST

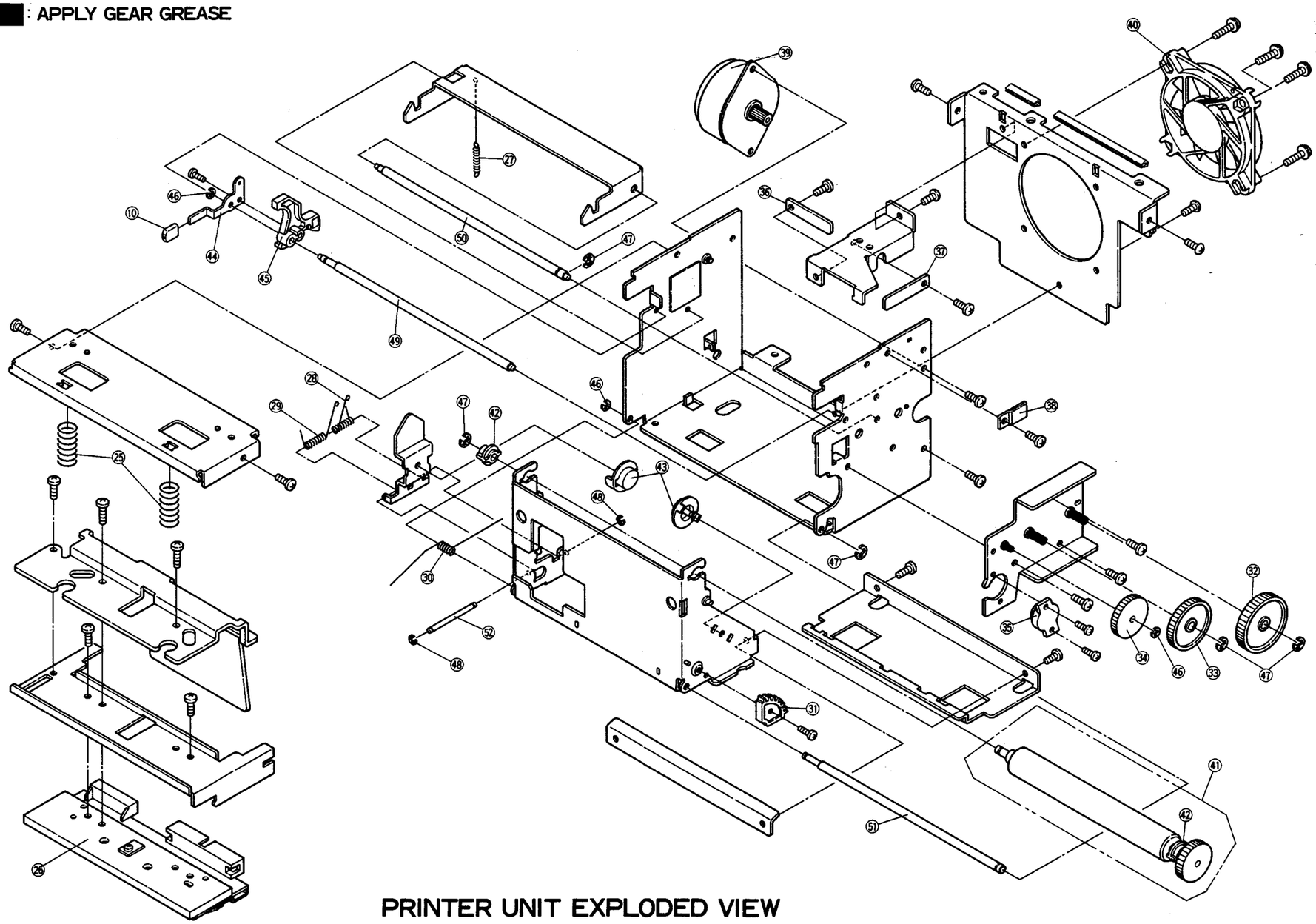
In order to expedite delivery of replacement parts.
Specify : 1. Model number/Serial number
2. Parts number and Description
3. Quantity
Unless full information is supplied, delay in execution of orders will result.



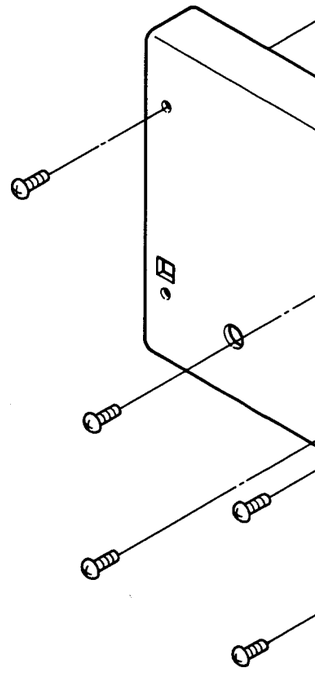
SYMBOL NO.	PARTS NAME	PARTS NO.	DESCRIPTION	ADDRESS	
1	DOOR UNIT	702C921040		E-1	
2	CASE SWITCH	702C916010		D-2	
3	FRONT PANEL UNIT	701A478010		D-2	
4	DOOR CATCH	761C273010		C-3	
5	PRINTER UNIT	939C028010		B-4	
6	CPU PCB ASSY	936C003005	(CP66E)	C-4	
6	CPU PCB ASSY	936C003006	(CP66B)	C-4	
7	VIDEO PCB ASSY	936C002004		D-4	
8	POWER PCB ASSY	936C008001		A-6	
9	PAD	771D051010		E-5	E-6
10	KNOB	734D518010	(LEVER)	B-4	
11	POWER BUTTON	☆	734D517020	D-1	
12	WIRE SPRING	☆	570D582040	D-1	
13	SEGMENT INLAY	☆	702D223010	D-1	
14	SWITCH BUTTON	☆	734D516020	D-1	
15	KNOB SPRING	☆	572D224010	D-1	
16	LED PCB ASSY	☆	936C005001	C-2	
17	SW PCB ASSY	☆	936C004001	C-3	
18	SPRING	☆	572D450010	C-3	
19	BUTTON STOPPER	☆	641D834010	C-2	
20	CAP	☆	761D647010	B-3	C-4
21	B-P-S HOLDER	☆	621D742010	A-5	
22	POWER SWITCH LEVER	☆	621D741010	A-6	
23	GUIDE-RAIL	☆	621D487010	D-5	
24	CUTTER	☆	596D588010	C-2	

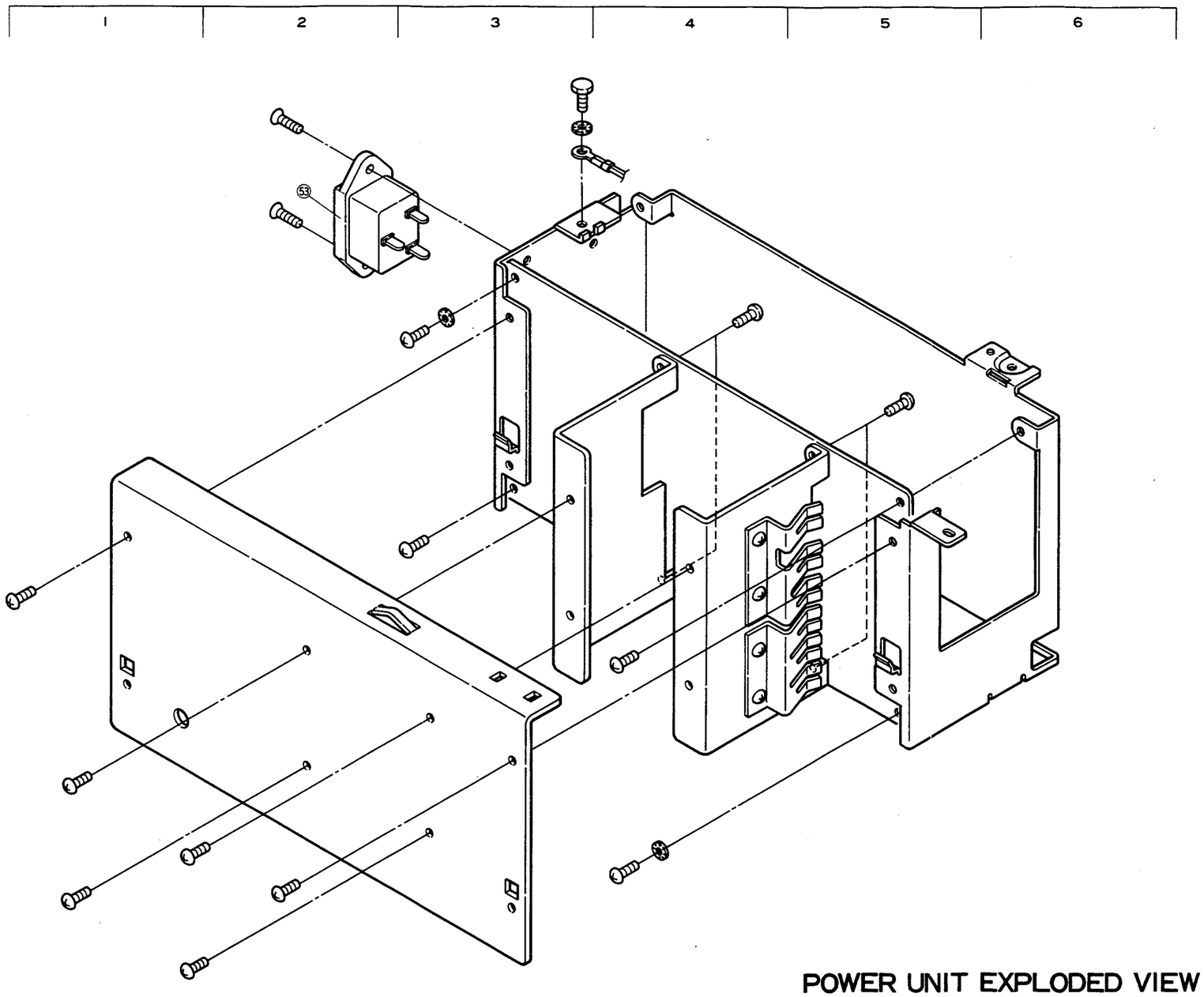
☆ : Not a stocked item

: APPLY GEAR GREASE



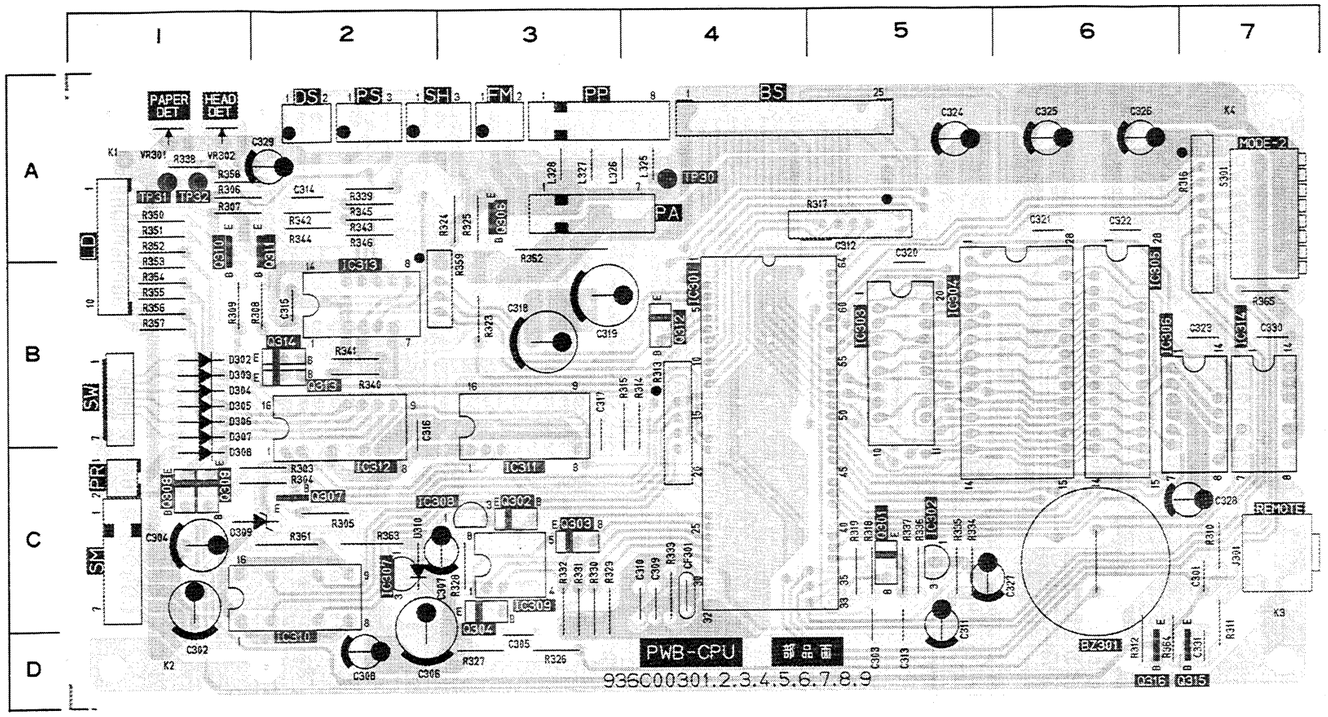
PRINTER UNIT EXPLODED VIEW





POWER UNIT EXPLODED VIEW

SYMBOL NO.	PARTS NAME	PARTS NO.	DESCRIPTION	ADDRESS	
	PRINT UNIT				
10	KNOB	734D518010		B-1	
25	HEAD SPRING	572D478010		C-1	
26	HEAD UNIT	460P102010		E-1	
27	LOCK SPRING	572D488010		A-3	
28	LEVER-SPRING	572D476010		C-2	
29	LEVER-SPRING	572D476020		C-2	
30	DOOR SPRING	572D477010		D-3	
31	DAMPER GEAR	596D408010		D-5	
32	M0 GEAR	621D746010		D-7	
33	W-GEAR	621D747010		D-7	
34	S-GEAR	621D748010		D-7	
35	DAMPER	641C474010		D-6	
36	PS SENSOR	936D012001		B-5	
37	SH SENSOR	936D011001		B-6	
38	H SENSOR	299P052050		C-6	
39	STEP MOTOR	288P104010		A-5	
40	FAN MOTOR	288P101020		A-7	
41	PLATEN UNIT	956D001010		E-7	
42	BEARING	621D743010		C-3	E-7
43	PAPER CORE	621D745010		C-4	
44	CAM LEVER	596D447010		B-2	
45	CAM	621C029010		B-2	
46	E-RING	685C002040	(E-2)	B-2 D-7	C-4
47	E-RING	685C002060	(E-3)	A-4 D-5	C-3 D-8
48	E-RING	685C002030	(E-1, 5)	C-4	D-3
49	CAM SHAFT	☆	531D221010	B-3	
50	LOCK-SHAFT	☆	531D219010	B-3	
51	PAPER-SHAFT	☆	531D218010	E-5	
52	LEVER SHAFT	☆	531D216010	D-3	
	POWER UNIT				
53	POWER JACK	451D046010	(3P)	A-2	
	☆: Not a stocked item				

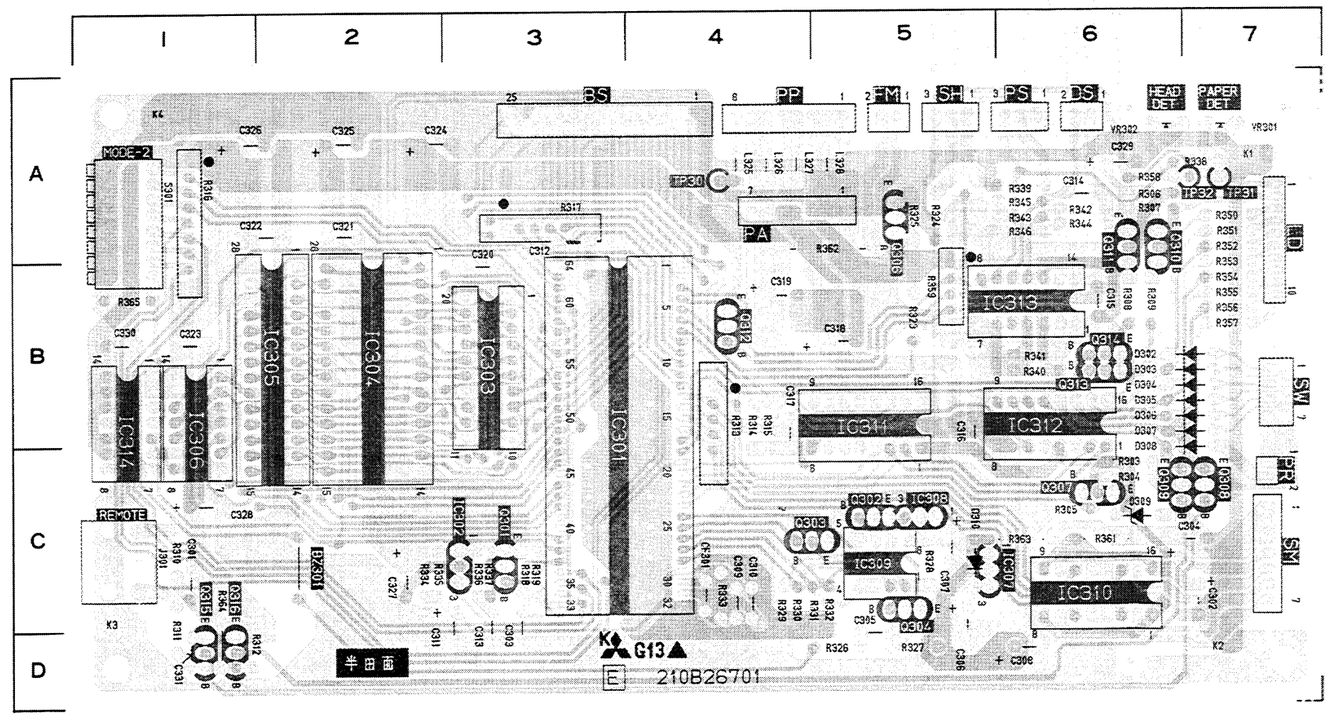


CPU-PCB (FOIL SIDE)

SYMBOL NO.	ADDRESS
D302	B- 1
D303	B- 1
D304	B- 1
D305	B- 1
D306	B- 1
D307	B- 1
D308	B- 1
D309	C- 2
D310	C- 2
IC301	B- 4
IC302	C- 5
IC303	B- 5
IC304	B- 5
IC305	B- 6
IC306	B- 6
IC307	C- 2
IC308	C- 3
IC309	C- 3
IC310	C- 2
IC311	C- C
IC312	C- 3
IC313	B- 2
IC314	B- 7

SYMBOL NO.	ADDRESS
L325	A- 4
L326	A- 3
L327	A- 3
L328	A- 3
Q301	C- 5
Q302	C- 3
Q303	C- 3
Q304	C- 4
Q306	A- 1
Q307	C- 2
Q308	C- 2
Q309	C- 2
Q310	A- 1
Q311	A- 2
Q312	B- 4
Q313	B- 2
Q314	B- 2
Q315	D- 7
Q316	D- 6

SYMBOL NO.	ADDRESS
TP30	A- 1
TP31	A- 1
TP32	A- 1
VR301	A- 1
VR302	A- 1

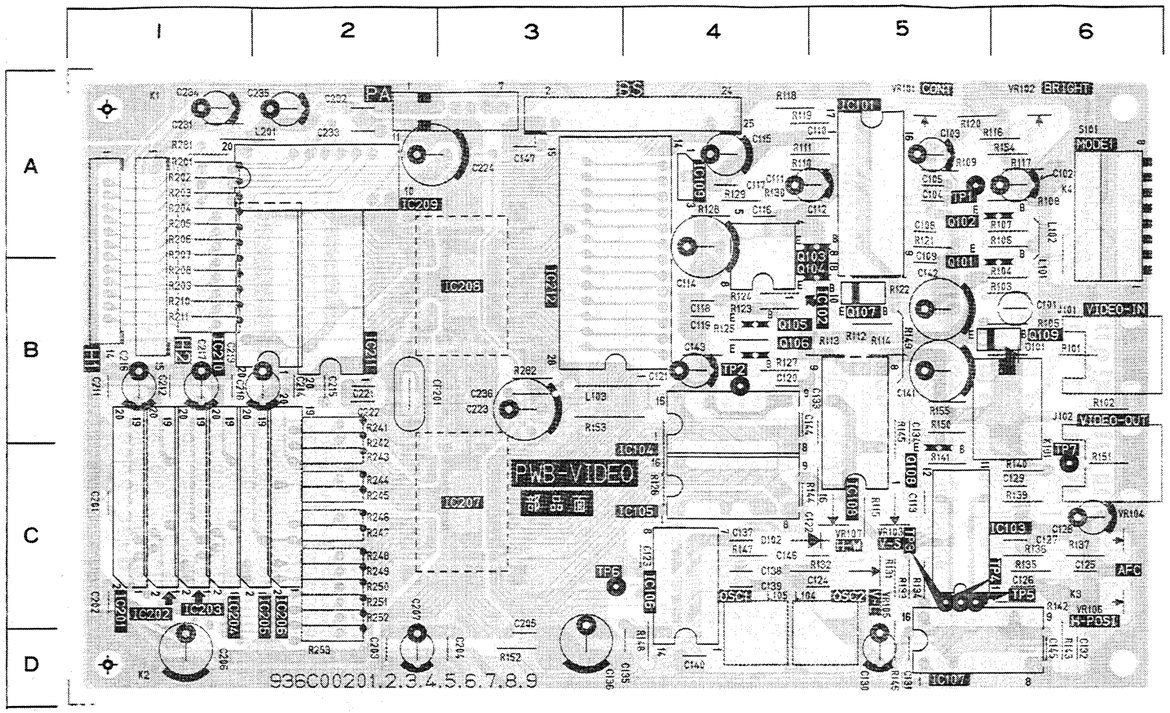


CPU-PCB (PARTS SIDE)

SYMBOL NO.	ADDRESS
D302	B- 6
D303	B- 6
D304	B- 6
D305	B- 6
D306	B- 6
D307	C- 6
D308	C- 6
D309	C- 6
D310	C- 5
IC301	C- 3
IC302	C- 3
IC303	B- 3
IC304	B- 2
IC305	B- 2
IC306	C- 1
IC307	C- 6
IC308	C- 5
IC309	C- 5
IC310	C- 6
IC311	C- 5
IC312	C- 6
IC313	B- 6
IC314	C- 1

SYMBOL NO.	ADDRESS
L325	A- 4
L326	A- 4
L327	A- 4
L328	A- 5
Q301	C- 3
Q302	C- 5
Q303	C- 5
Q304	D- 5
Q306	B- 5
Q307	C- 6
Q308	C- 7
Q309	C- 6
Q310	B- 6
Q311	B- 6
Q312	B- 4
Q313	B- 6
Q314	B- 6
Q315	C- 1
Q316	C- 1

SYMBOL NO.	ADDRESS
TP30	A- 4
TP31	A- 7
TP32	A- 7
VR301	A- 7
VR302	A- 6

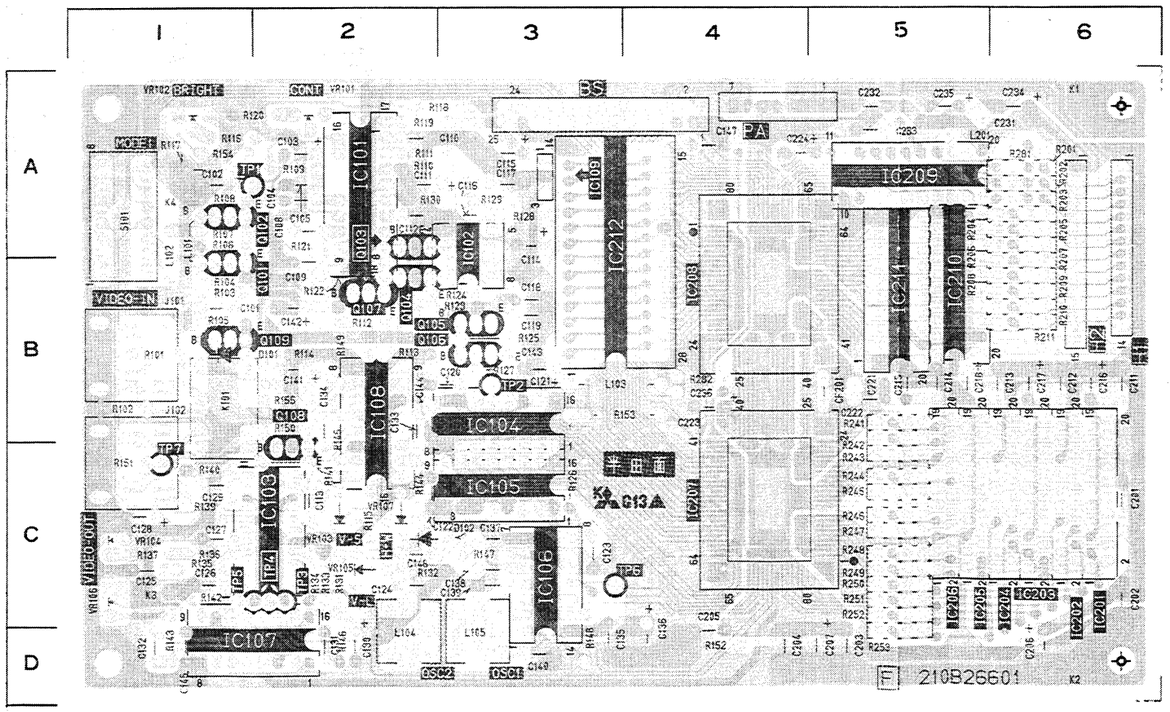


VIDEO-PCB (PARTS SIDE)

SYMBOL NO.	ADDRESS
D101	B- 6
D102	C- 4
IC101	A- 5
IC102	B- 4
IC103	C- 5
IC104	C- 4
IC105	C- 4
IC106	C- 4
IC107	D- 5
IC108	C- 5
IC109	A- 4
IC201	C- 1
IC202	C- 1
IC203	C- 1
IC204	C- 1
IC205	C- 2
IC206	C- 2
IC207	C- 3
IC208	B- 3
IC209	A- 2
IC210	B- 2
IC211	B- 2
IC212	B- 3

SYMBOL NO.	ADDRESS
L101	B- 6
L102	B- 6
L103	B- 3
L104	C- 5
L105	C- 4
L201	A- 1
Q101	B- 5
Q102	B- 5
Q103	B- 5
Q104	B- 5
Q105	B- 4
Q106	B- 4
Q107	B- 5
Q108	C- 5
Q109	B- 5

SYMBOL NO.	ADDRESS
TP1	A- 5
TP2	B- 4
TP3	C- 5
TP4	C- 5
TP5	C- 5
TP6	C- 3
TP7	C- 6
VR101	A- 5
VR102	A- 6
VR103	C- 5
VR104	C- 6
VR105	C- 5
VR106	C- 6
VR107	C- 5

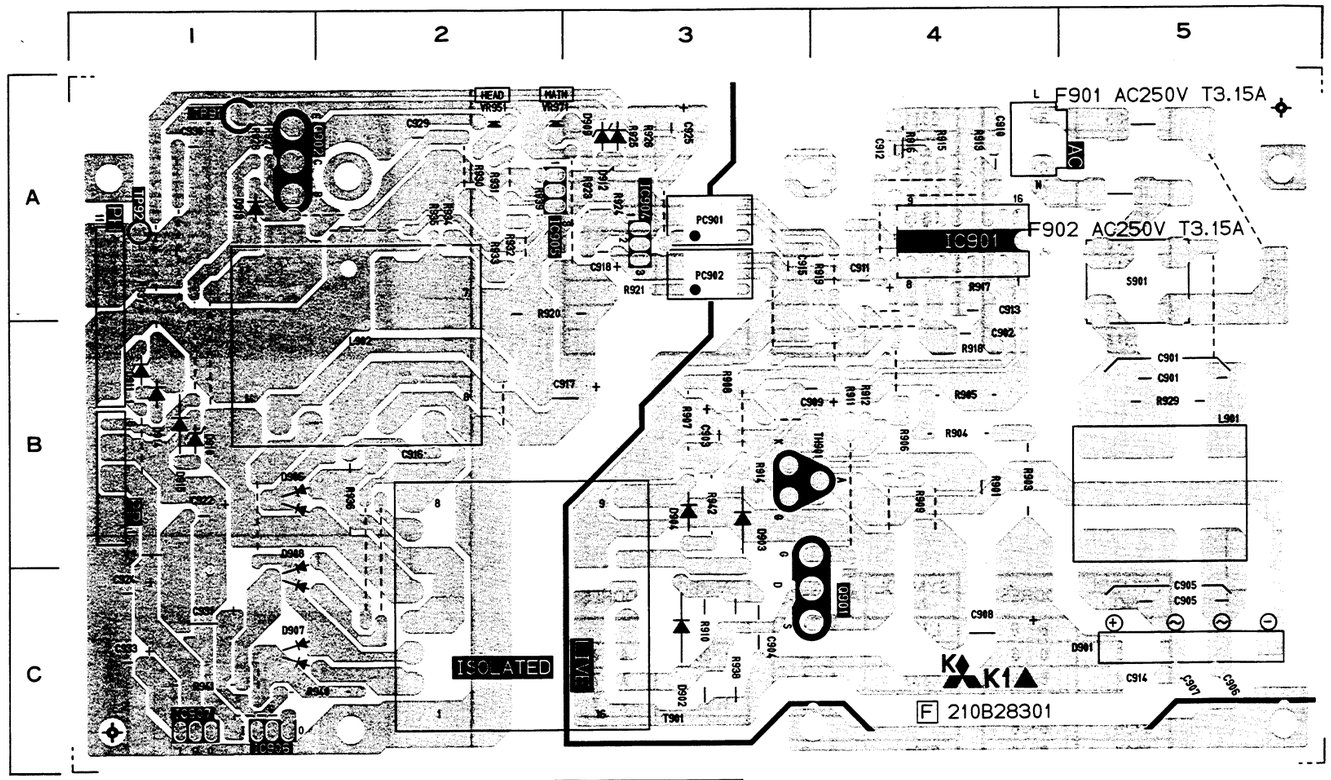


VIDEO-PCB (FOIL SIDE)

SYMBOL NO.	ADDRESS
D101	B- 2
D102	C- 3
IC101	A- 2
IC102	A- 3
IC103	C- 2
IC104	B- 3
IC105	C- 3
IC106	C- 3
IC107	D- 2
IC108	B- 2
IC109	A- 3
IC201	C- 6
IC202	C- 6
IC203	C- 6
IC204	C- 6
IC205	C- 5
IC206	C- 5
IC207	C- 4
IC208	B- 4
IC209	A- 5
IC210	B- 5
IC211	B- 5
IC212	B- 4

SYMBOL NO.	ADDRESS
L101	A- 1
L102	A- 1
L103	B- 4
L104	D- 2
L105	D- 3
L201	A- 5
Q101	B- 2
Q102	A- 2
Q103	A- 2
Q104	B- 2
Q105	B- 3
Q106	B- 3
Q107	B- 2
Q108	B- 2
Q109	B- 2

SYMBOL NO.	ADDRESS
TP1	A- 2
TP2	B- 3
TP3	C- 2
TP4	C- 2
TP5	C- 2
TP6	C- 3
TP7	C- 1
VR101	A- 2
VR102	A- 1
VR103	C- 2
VR104	C- 1
VR105	C- 2
VR106	C- 1
VR107	C- 2



PCB-POWER (FOIL SIDE)

SYMBOL NO.	ADDRESS
D 901	C – 5
D 902	C – 3
D 903	B – 3
D 904	B – 3
D 906	B – 1
D 907	C – 1
D 908	B – 1
D 909	A – 3
D 910	B – 1
D 911	B – 1
D 912	A – 3
D 913	A – 1
D 914	B – 1
D 915	B – 1
F 901	A – 5
F 902	A – 5
IC901	A – 4
IC904	A – 3
IC905	A – 2
IC906	C – 1
IC907	C – 1
L 901	C – 4
L 902	B – 2
Q 901	C – 4
Q 902	A – 1
T 901	C – 3
TP91	A – 1
TP92	A – 1
VR951	A – 2
VR971	A – 2

PCB-LED

PCB-CPU

PCB-POWER [PP]

PCB-VIDEO [PA]

PCB-VIDEO [BS]

D701

D702

L1

L2

L3

SW-UNIT

PCB-SW

SW

PR

FM

SM

BRIGHT

CONTRAST

DOWN

FUNCTION

UP

COPY/UP

PRINT

STEP-MOTOR

FAN-MOTOR

Q311 2SA950-Y LED-DRIVE1

Q310 2SA950-Y LED-DRIVE2

Q314 DTC124ES SEG1

Q313 DTC124ES SEG2

Q312 DTC124ES POWER-CONT

Q307 2SC1740S-S SW-IN

Q308 DTC124ES MEMORY-IN2

Q309 DTC124ES PRINT-IN2

Q306 2SC2274-F FAN-DRIVE

Q302 DTA124ES RST-DRIVE

IC312 M54972P S-IN-DRIVER

IC310 M54567P STEP-MOTOR -DRIVE

IC311 μPD6326C D/A CONV.

IC307 NJM78L05A 5V-REG

IC308 PST520C RESET

IC301 M50734SP CPU

IC303 SN74LS373N ADDRESS-LATCH

IC304 HN27C256 32K ROM

R317 22K X 4 R-N

R350 22K X 3 R-N

R311 22K X 4 R-N

R342 100K

R350 330

R351 330

R352 330

R353 330

R354 330

R355 330

R356 330

R357 330

R303 10K

R304 2.2K

R305 2.2K

R306 10K

R307 10K

R308 1K

R309 1K

R314 1K

R315 1K

R361 390 1/2W

R363 1/2W

R323 3.9K

R325 22K

R327 2.2K

R328 22K

C301 16V 1000μ

C302 16V 470μ

C303 16V 220μ

C304 16V 470μ

C305 16V 1000μ

C306 16V 1000μ

C307 16V 220μ

C308 16V 470μ

C309 16V 220μ

C310 16V 1000μ

C311 25V .047

C312 10V 1.047

C316 25V .047

C317 25V .047

C318 6.3V 1000μ

C319 16V 1000μ

D308-D309 1S2076A /1S2471

D310 1S2076A /1S2471

D309 EA48 -07AB

L325

L326

L327

L328

PP

PA

BS

HSTB

RST

DS

PS

HON

SH

FM

MONIT

DS4

DS3

DS2

DS1

A

B

Ā

B̄

SEG1

SEG2

SD4

LDL

LDA

CLK

SD

BZ

CS

CL

LO

RDY

BEQ

BRIT

CONT

MEMORY

PRINT

SD1

SD2

SD3

DS

PS

SH

PCB-VIDEO [PA] ⇧ PA

PCB-VIDEO [BS] ⇧ BS

DS

PS

SH

L329

C314 .01 C-C

R342 100K

R344 1K

R343 100K

R345 100K

R346 3.9K

R339 270

R324 270

TP31

TP32

R331 10K

VR301 B-100K PAPER-DET

R341 10K

R340 10K

R350 10K

VR302 B-100K HEAD-DET

R317 82K X 4 P-N

R350 82K X 3 P-N

C315 25V .047 C-C

C330 10V 220μ C-ELE

IC313 μPC339C/LM339N SENSOR-DET

Q315 2SA933S-Q MEMORY-IN1

MEMORY

R364 10K

C331 .01 C-C

R311 10K

R310 10K

PRINT

R312 10K

C301 .01 C-C

Q316 2SA933S-Q PRINT-IN1

J301 REMOTE

IC301 M50734SP CPU

C312 25V .047 C-C

HSTB P04 STB

RST P05 DME

DS P06 TX

PS P07 RX

HON P10

SH P11

FM P12

MONIT P13

DS4 P14

DS3 P15

DS2 P16

DS1 P17

A P20 HA

B P21 HB

Ā P22 HC

B̄ P23 HD

SEG1 P24 VA

SEG2 P25 VB

SD4 P26 VC

LDL P27 VD

LDA P30 /PWM

CLK P31 /SCLK

SD P32 /SIO

BZ P33

CS P34

CL P35

LO P36

RDY P37

BEQ P43 INT

VCC 5V

P03 BUSY SD1

P02 CNTR SD2

P01 INT 4.2V

P00 INNY SD3

WD

AD0

AD1

AD2

AD3

AD4

AD5

AD6

AD7

ALE

AB

A9

A10

A11

A12

A13

A14

A15

Sync

Ø

W̄

R̄

VM

IC311 μPD6326C D/A CONV.

BRIT

CONT

IC303 SN74LS373N ADDRESS-LATCH

IC304 HN27C256AG12@04 32K ROM

IC305 HM6264ALSP-12/15 8K SRAM

IC306 SN74LS10N ADDRESS-DECODER-1

IC314 SN74LS00N ADDRESS-DECODER-2

R316 82K X 7 P-N

S301 SW-DIP 8P MODE-2

SD1

SD2

SD3

SD4

IC303
SN74LS373N
ADDRESS-LATCH

IC304
HN27C256AG12@04
32K ROM

IC305
HM6264ALSP-12/15
8K SRAM

IC306
SN74LS10N
ADDRESS-DECODER-1

IC314
SN74LS00N
ADDRESS-DECODER-2

IC311
μPD6326C
D/A CONV.

IC302
PST520C
RESET

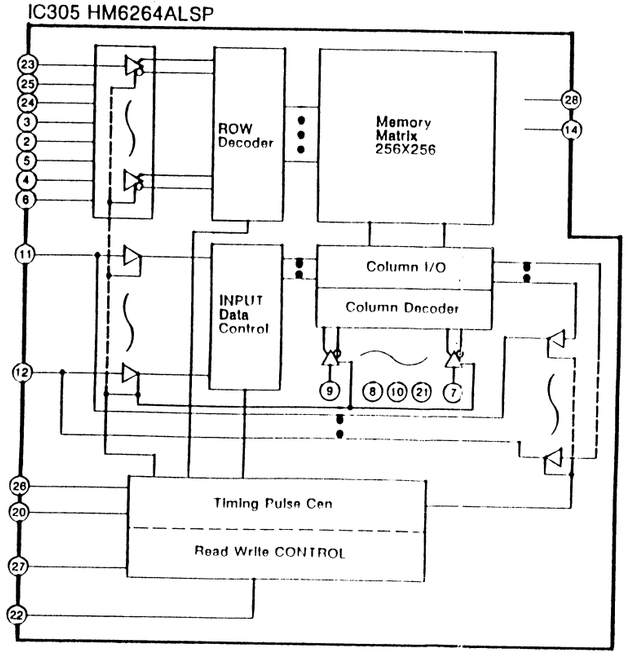
Q301
DIC124ES
WATCH-DOG

Q316
2SA933S-Q
PRINT-IN1

R316
22K X 7
B-N

R301
SW-DIP 8P
MODE-2

IC305 HM6264ALSP



SW-UNIT

PCB-SW

PRINT

FUNCTION

UP

COPY/UP

PRI-S

SW

PR

STEP-MOTOR

FAN-MOTOR

FM

IC310
M54567P
STEP-MOTOR
-DRIVE

Q308
DIC124ES
MEMORY-IN2

Q309
DIC124ES
PRINT-IN2

MEMORY

PRINT

IC311
μPD6326C
D/A CONV.

BRIT

CONT

Q306
2SC2274-F
FAN-DRIVE

IC307
NJM78L05A
5V-REG

IC308
PST520C
RESET

Q302
DIA124ES
RST-DRIVE

Q304
DIC124ES
BUZZER-DRIVE

Q303
DIC124ES
CS-DRIVE

IC309
M6M80021P
2KEEP ROM

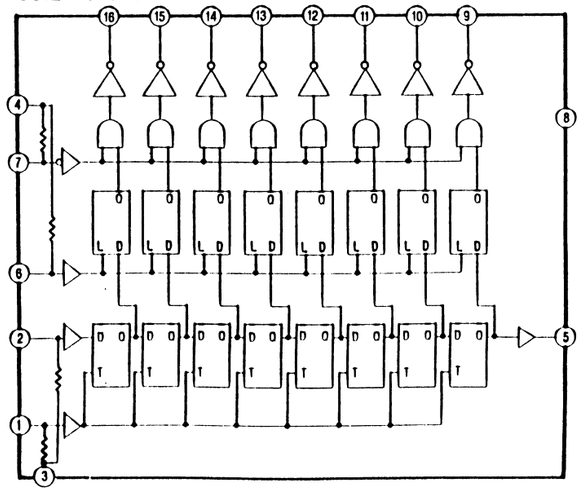
IC302
PST520C
RESET

Q301
DIC124ES
WATCH-DOG

IC303
SN74LS373N
ADDRESS-LATCH

IC304
HN27C25
32K ROM

IC312 M54972P



PCB-VIDEO

PCB-CPU
PA
PA
GND 5V 12V

IC209
TC74HC245
HEAD-DATA
BUFFER-3

IC210
TC74HC245
HEAD-DATA
BUFFER-1

IC211
TC74HC245
HEAD-DATA
BUFFER-2

IC208
UPD65050GF-126
HEAD-DRIVE

*BOTTOM VIEW

IC212
MCM60L256AP10
/HM62256LP-10
32K SRAM

IC202
MCM514256AZ10
1M DRAM

IC204
MCM514256AZ10
1M DRAM

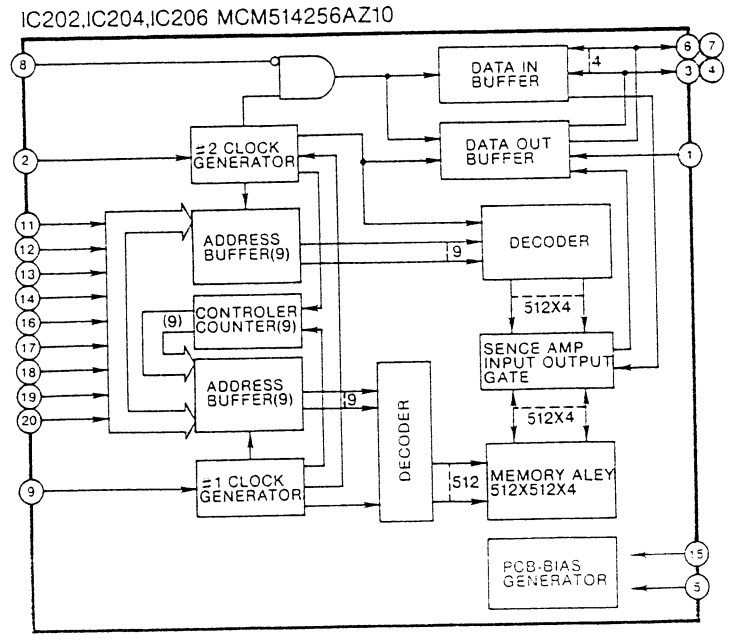
IC206
MCM514256AZ10
1M DRAM

IC207
UPD65042GF-432
MEMORY-CONTROL

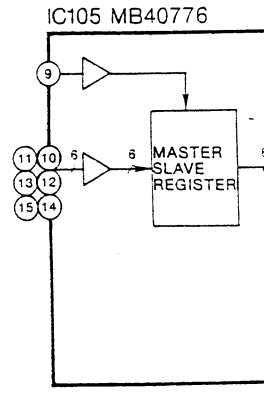
*BOTTOM-VIEW

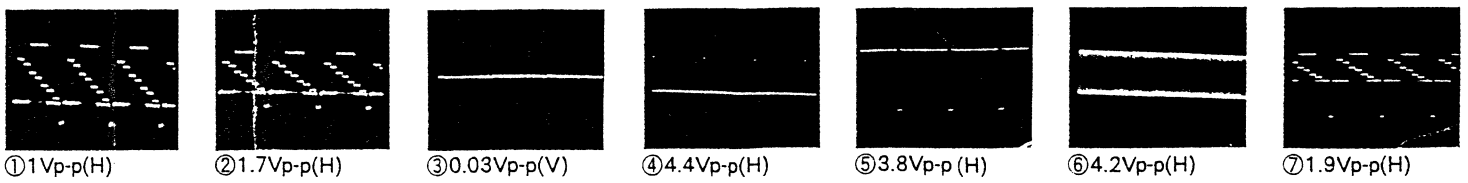
REI
REQ
ALE

IC202,IC204,IC206 MCM514256AZ10



IC105 MB40776





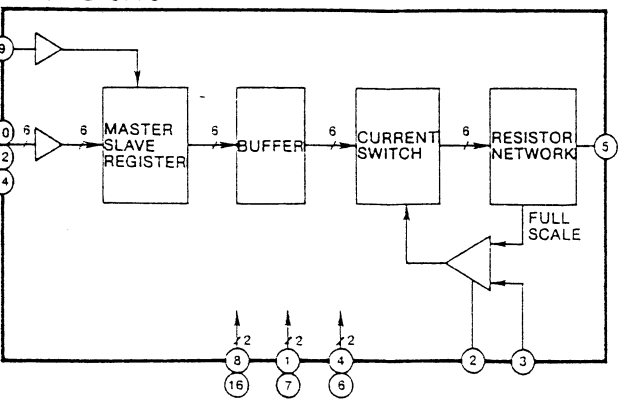
PC8-CPU
BS
BS
HSTB RST TH THG ALE D7 D6 D5 D4 D3 D2 D1 D0 GACS GAR W DS4 DS3 DS2 DS1 MONIT BRIT CONT

IC109 L78N09 9V REG
Q106 2SC1740S L-LIM-B
Q105 2SC1740S L-LIM-A
Q103 2SA933S H-LIM-A
Q104 2SC933S H-LIM-B
Q102 2SA1740S VIDEO-AMP2
Q101 2SC1740S VIDEO-AMP1
IC104 MB40576 A/D
IC102 μPC812C A/D-REF
IC101 HA11465A VIDEO-AMP
Q107 DTA124ES SYNC-INVERT
IC105 MB40776 D/A
IC103 NJM2217L AFC/VIDEO-SW
Q108 2SA950-Y VIDEO-OUT
Q109 DTC124ES RELAY-DRIV
IC106 TC74HC00P OSC
IC107 SN74LS221N H-DELAY
IC108 SN74LS221N H-SEPA

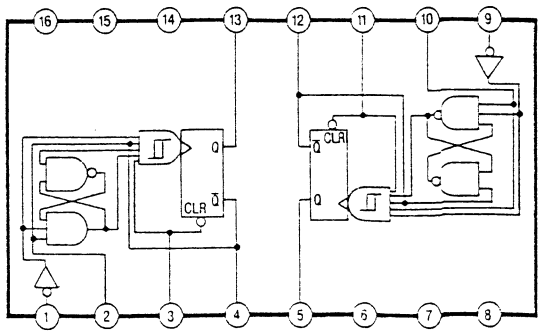
MODE1
S101 SWITCH-DIP 8P
DS1 SERV/USER
DS2 REV/NOR
DS3 SIDE/NOR
DS4 LINES 625/525
AFC ON/OFF
4.43M TRAP ON/OFF
3.58M TRAP ON/OFF
75Ω ON/OFF

J101 CONNECTOR-BNC VIDEO IN
J102 CONNECTOR-BNC VIDEO OUT
K101 G5A-237P DC12V

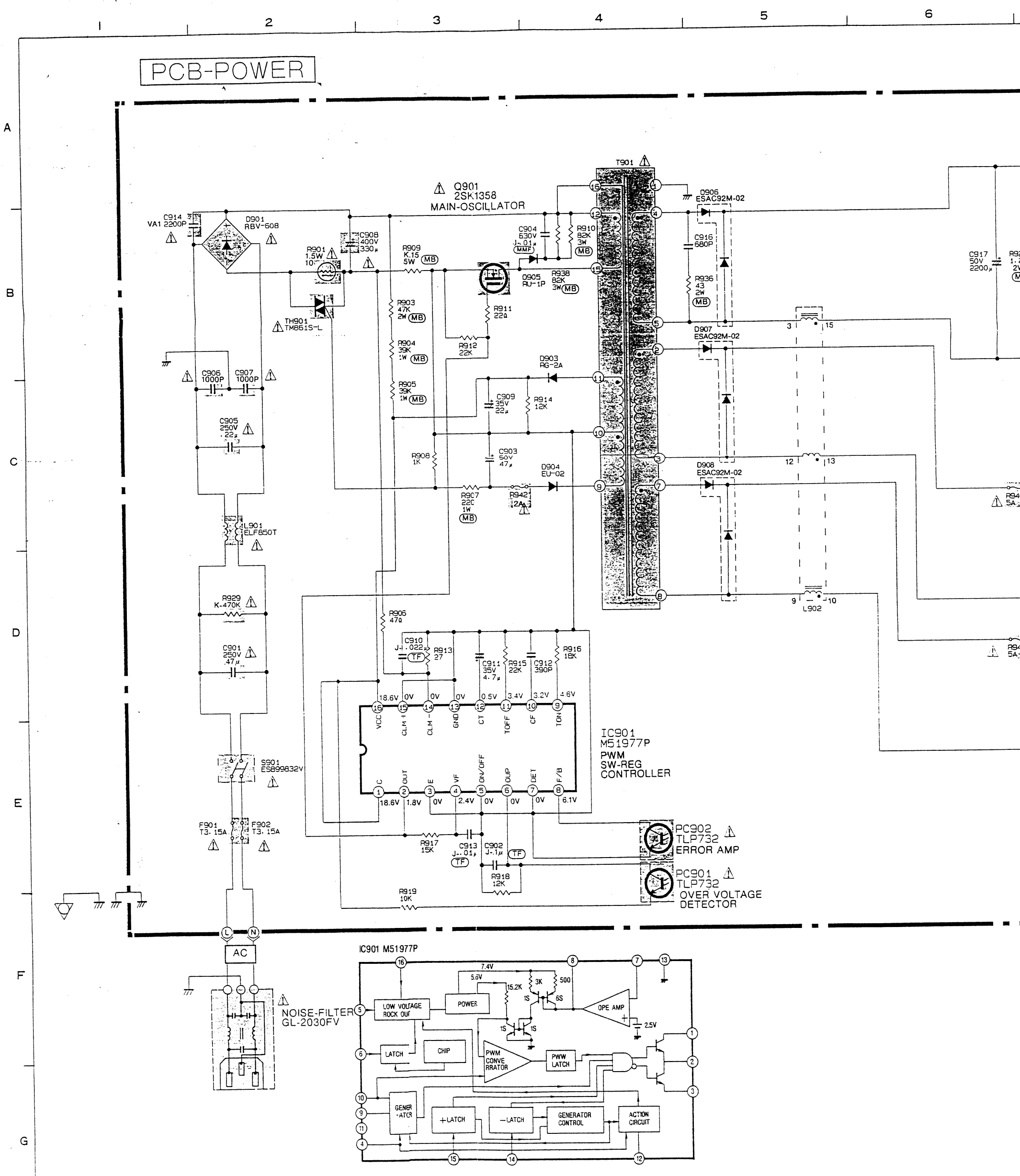
IC105 MB40776

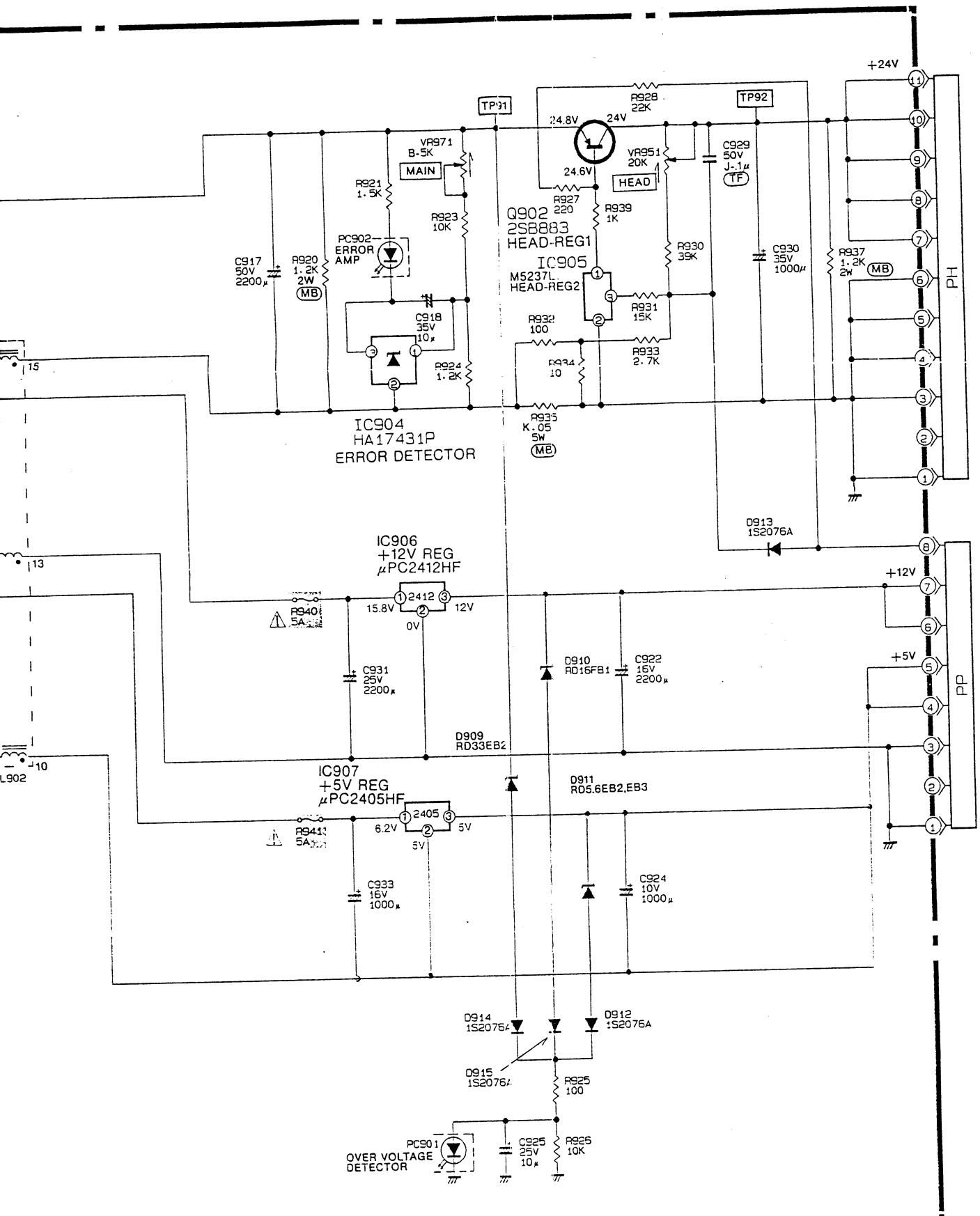


IC107,IC108 SN74LS221N



PCB-POWER


Q901
2SK1358
MAIN-OSCILLATOR
T901
C914
VA1 2200P
D901
RBV-608
C908
400V
330μ
R901
1.5W
10Ω
TH901
TM861S-L
R909
K.15
5W
MB
C904
630V
J-.01μ
MMF
R910
82K
3W
MB
D905
RU-1P
R938
82K
3W
MB
R903
47K
2W
MB
R904
39K
1W
MB
R905
39K
1W
MB
R911
22Ω
R912
22K
D903
RG-2A
C909
35V
22μ
R914
12K
R908
1K
C903
50V
47μ
D904
EU-02
R907
22Ω
1W
MB
R942
2A
D906
ESAC92M-02
C916
680P
R936
43
2W
MB
D907
ESAC92M-02
D908
ESAC92M-02
C917
50V
2200μ
C906
1000P
C907
1000P
C905
250V
.22μ
L901
ELF650T
R929
K-470K
C901
250V
.47μ
S901
ES899632V
F901
T3.15A
F902
T3.15A
R906
47Ω
C910
J-.022μ
TF
R913
27
C911
35V
4.7μ
R915
22K
C912
390P
R916
18K
18.6V 0V 0V 0V 0.5V 3.4V 3.2V 4.6V
VCC CLM+ CLM- GND CT TOFF CF TON
C OUT E VF ON/OFF OUP DET F/B
18.6V 1.8V 0V 2.4V 0V 0V 0V 6.1V
IC901
M51977P
PWM
SW-REG
CONTROLLER
R917
15K
C913
J-.01μ
TF
C902
J-.1μ
TF
R918
12K
R919
10K
PC902
TLP732
ERROR AMP
PC901
TLP732
OVER VOLTAGE
DETECTOR
L902
R940
5A
R941
5A
AC
L
N
NOISE-FILTER
GL-2030FV
IC901 M51977P
LOW VOLTAGE
ROCK OUT
POWER
7.4V
5.6V
15.2K
3K
500
1S
6S
OPE AMP
2.5V
LATCH
CHIP
PWM
CONVE
RRATOR
PWW
LATCH
GENER
-ATOR
+LATCH
-LATCH
GENERATOR
CONTROL
ACTION
CIRCUIT


+24V
TP91
TP92
R928 22K
24.8V
24V
24.6V
VR971 B-5K
MAIN
VR951 20K
HEAD
C929 50V J-.1μ TF
R921 1.5K
R923 10K
R927 220
R939 1K
Q902 2SB883 HEAD-REG1
IC905 M5237L HEAD-REG2
R930 39K
C930 35V 1000μ
R937 1.2K 2W MB
PC902 ERROR AMP
C917 50V 2200μ
R920 1.2K 2W MB
C918 35V 10μ
R924 1.2K
R931 15K
R932 100
R933 2.7K
R934 10
R935 K.05 5W MB
IC904 HA17431P ERROR DETECTOR
PH
D913 1S2076A
IC906 +12V REG μPC2412HF
2412
15.8V
12V
0V
+12V
R940 5A
C931 25V 2200μ
D910 RD16FB1
C922 16V 2200μ
+5V
PP
D909 RD33EB2
IC907 +5V REG μPC2405HF
2405
6.2V
5V
D911 RD5.6EB2,EB3
R941 5A
C933 16V 1000μ
C924 10V 1000μ
D914 1S2076A
D912 1S2076A
D915 1S2076A
R925 100
PC901 OVER VOLTAGE DETECTOR
C925 25V 10μ
R926 10K
15
13
10
L902